# **Notices**

From this update (Version 468), the file name of ThinkServer PSREF book has been changed to **ThinkServer.pdf**.

Please use the new permanent URL link: www.lenovo.com/psref/pdf/ThinkServer.pdf to visit ThinkServer PSREF book.

The former permanent URL of ThinkServer PSREF book (www.lenovo.com/psref/pdf/svbook.pdf) will be removed in the near future.







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# **Summary of Changes**

This section describes the changes made in this version of ThinkServer PSREF and in previous version. This edition might also include minor corrections and editorial changes which are not identified.

# March 4, 2015 - Version 469

Additions in this update

New ThinkServer TS140 models announced March 2015.

# February 11, 2015 - Version 468

Additions in this update

▶ New ThinkServer RD350/RD450/RD550/RD650 models announced February 2015 .

# **January 28, 2015 - Version 467**

Additions in this update

- ▶ New ThinkServer RD550 models announced December 2014.
- ► Add 2nd CPU PN on RD550

# **January 7, 2015 - Version 466**

Additions in this update

- ▶ New ThinkServer RD650 models announced October or December 2014 .
- ▶ New ThinkServer RD650 Options sheet.
- ▶ New ThinkServer RD550 Options sheet.
- New ThinkServer RD650 Overview sheet.

# Changes in this update

Update specifications:

Add M.2 SSD support on RD650 and RD550.

Add chassis intrusion switch on RD650 and RD550.

Update AnyRAID support information on RD650 and RD550

Update expansion slots specification on RD650 and RD550.

Update rear disk bay spec on RD650 and RD550.

Add internal storage supporting list for RD650 and RD550

Add 2nd CPU PN on RD650

Remove some RD650 and RD550 SVT models.

# **December 17, 2014 - Version 465**

# Additions in this update

New models

New ThinkServer RD450 models ann December 9, 2014:

70DA000XUX,70DA000YUX,70DA0010UX,70DA0011UX,70DA0012UX,70DA0013UX,70DA0014UX, 70DC001CUX,70DC001DUX,70DC001EUX,70DC001FUX,70DC001GUX,70DC001HUX,70DC001JUX, 70DC001KUX,70DE000HUX,70DE000JUX,70DE000KUX,70DV0008UX,70DV0009UX,70DV000AUX

► New models

New ThinkServer RD450 models ann December 9, 2014:

70D6001YUX, 70D60020UX, 70D60021UX, 70D60022UX, 70D60023UX, 70D60024UX, 70D60025UX, 70D60026UX, 70D8001TUX, 70D8001UUX, 70D8001VUX, 70D8001WUX, 70D8001XUX,

70D8001YUX, 70D80020UX, 70D80021UX

# December 3, 2014 - Version 464

Additions in this update

- New product
  - ThinkServer RD450 ann December 2, 2014.
- New product

ThinkServer RD350 ann December 2, 2014.

On RD450, RD350 pages, add 2nd CPU option PN on single processor models

# November 12, 2014 - Version 463

Changes in this update

▶ Updates RD650 and RD550 network interface specifications.

# September 30, 2014 - Version 460

Changes in this update

- ▶ Updates RD650/RD550/TD350 environmental specifications, add 45 ° C continuous operation configuration limitation.
- ► Remove RD650 model 70CV0000US.

# **September 10, 2014 - Version 459**

Additions in this update

New product(s)

New ThinkServer TD350 announced September 2014 (70DG-1, 70DG-2, TD350REL-1)

New ThinkServer RD650 announced September 2014 (70D0-1, 70D4-1, 70DR-1, RD650REL-1)

New ThinkServer RD550 announced September 2014 (70CV-1, 70CV-2, 70CX-1, RD550REL-1)

# August 19, 2014 - Version 458

Additions in this update

► New model(s)

New ThinkServer RD650 models announced August 2014

New ThinkServer RD550 models announced August 2014

# **April 15, 2014 - Version 452**

Changes in this update

► Selected RD340/RD440/RD540/RD640 models are withdrawn and labeled as red

# February 25, 2014 - Version 450

# Additions in this update

New section

ThinkServer Servers, contains all ThinkServer servers pages

New section

ThinkServer Storage, contains ThinkServer storage pages

▶ New section

Summary of changes, contains changes list for the three most recent versions

New product

ThinkServer TD340 ann January 21, 2014. Includes the following pages:

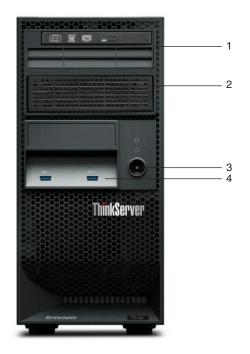
ThinkServer TD340 Overview

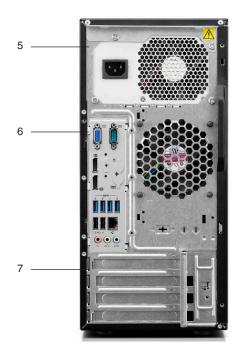
ThinkServer TD340 TopSeller Models - 70B7 - I

ThinkServer TD340 TopSeller Models - 70B7 - II

ThinkServer TD340 TopSeller Models - 70B7 - III

# ThinkServer TS140 - Overview





#### Front view

- 1. Optional slim optical + 3.5" drive bay in standard 5.25" bay
- 2. Optional 3.5" hard drive bay
- 3. Power Button
- 4. Front I/O: 2 USB 3.0 (blue)

#### Rear view

- Power Supply: 280 watts 80 PLUS Bronze/450 watts 80 PLUS Platinum
- 6. Rear I/O: 2 USB 2.0 4 USB 3.0(blue) 1 serial (9-pin) 1 RJ-45 (GbE)

  - 1 line-in
  - line-out

  - 1 microphone-in
    2 DisplayPort (for Intel HD Graphics)
    1 VGA (for Intel HD Graphics)
- 7. 1 PCle 3.0 x16

  - 1 PCle 2.0 x1 1 PCle 2.0 x16 (x4 elec) 1 PCl

# Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3, Core-i3 4000, and Pentium families
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to four 3.5" hard drive bays, two 3.5" hard drive bays standard

# Mechanical

- Raven black color; metal case
- Rack-mountable to 4U
- 6.89"W x 16.97"D x 14.76"H
- 175mm W x 431mm D x 375mm H
- 28.66 lb (13kg) max configuration
- 25-liter

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A4001LUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001MUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001NUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001QUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Foundation	1
70A4001RUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Essentials	1
70A4001SUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### nkServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45) three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCI)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>
Serviceability	Toolless side cover removal     Toolless disk and optical drive removal (standard bays)     Toolless adapter retention     Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     RoHS-compliant More environmental information and requirements, please see      ThinkServer TS140 Platform Specifications sheet

# **Drive bays** 3

Left

Front

- Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
   Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
   Optional 3rd 2.5" drive bay
   Standard 3.5"/2.5" primary drive bay
   Standard 3.5"/2.5" 2nd drive bay

Av3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models

#### **Expansion Slots**

Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3

#### Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop
- (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable, prohibits side cover removal)
  Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

# ThinkServer TS140 (70A4) - TopSeller (March 2015)

Product Specifications Reference (PSREF)

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A4006EUX	Xeon E3-1246 v3 4C/3.5GHz/8MB/1600MHz/	1600MHz ECC	8GBx4	Intel HD P4600	1	2x2TB 3.5" SATA	DVD±RW	No	No	280W	No	No	3
	Xeon E3-1246 v3 4C/3.5GHz/8MB/1600MHz/	1600MHz ECC	8GBx2	Intel HD P4600	1	2x1TB 3.5" SATA	DVD±RW	No	No	280W	No	No	3
70A4006GUX	Xeon E3-1226 v3 4C/3.3GHz/8MB/1600MHz/	1600MHz ECC	8GBx1	Intel HD P4600	1	2x500GB 3.5" SATA	DVD±RW	No	No	280W	No	No	3

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### kServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller,
1 10000001	optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45) three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	25-liter, raven black color; metal case     (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm     28.66 lb (13kg) max configuration
Serviceability	Toolless side cover removal     Toolless disk and optical drive removal (standard bays)     Toolless adapter retention     Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>
Environmental certifications	<ul> <li>GREENGUARD<sup>®</sup> certified</li> <li>Energy Star Server 1.1 qualified/</li> <li>RoHS-compliant</li> <li>More environmental information and requirements, please see</li> <li>ThinkServer TS140 Platform Specifications sheet</li> </ul>

#### **Drive bays**



Left

- Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
   Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
   Optional 3rd 2.5" drive bay
   Standard 3.5"/2.5" primary drive bay
   Standard 3.5"/2.5" 2nd drive bay

4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models

#### **Expansion Slots**

Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3

#### Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop
- (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
  Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

# ThinkServer TS140 (70A5) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical		Discrete ethernet		Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)	
	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	450W	No	No	1	

<sup>\*</sup>Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see <u>ThinkServer TS140 Platform Specifications</u> sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bays
Chipset	Intel C226 Chipset	
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	The state of the s
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Left
Drive bays	Up to four 3.5" hard drive bays (see right)	1: Standard 5.25", 1.6" high optical or
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	or optional 4th 2.5" drive bay
Front ports	Two USB 3.0 (blue)	3: Optional 3rd 2.5" drive bay
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay Note:
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel)  Single Serial Port PCI Adapter (1xSerial)  Dual Serial Ports PCI Adapter (2xSerial PCI)  Dual Serial Ports PCIe Adapter(2xSerial PCIe)	4x3.5" bays models: Bay 1, 2, 4, 5 are included in 3x3.5" bays models: Bay 2, 4, 5 are included in me 2x3.5" bays models: Bay 4, 5 are included in models:
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Supervisor Olyte
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (
Mechanical	25-liter, raven black color; metal case     (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm     28.66 lb (13kg) max configuration	Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 ( Slot 4: half-length, full-height, PCl 2.3
Serviceability	Toolless side cover removal Toolless disk and optical drive removal (standard bays) Toolless adapter retention Illuminated front icons	Security  • Security chip: ST33ZP24AR28PVSP for T TCG 1.2-compliant  • Padlock loop
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	(in rear for opt padlock; padlock prohibits s
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS140 Platform Specifications sheet	Security slot (in rear for optional Kensingto prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)



in models models odels

(near CPU)

(x4 elec)

- TPM function,
- side cover removal)
- gton Microsaver cable;

Front

# ThinkServer TS140 (70A0) - September 2013

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage (Drive bays)	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A00003US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	1xParallel	1x350-T2	280W	No	Foundation	1
70A00006US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	2xIntel CT	280W	No	Foundation	1
70A00009UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000AUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000BUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000CUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000DUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

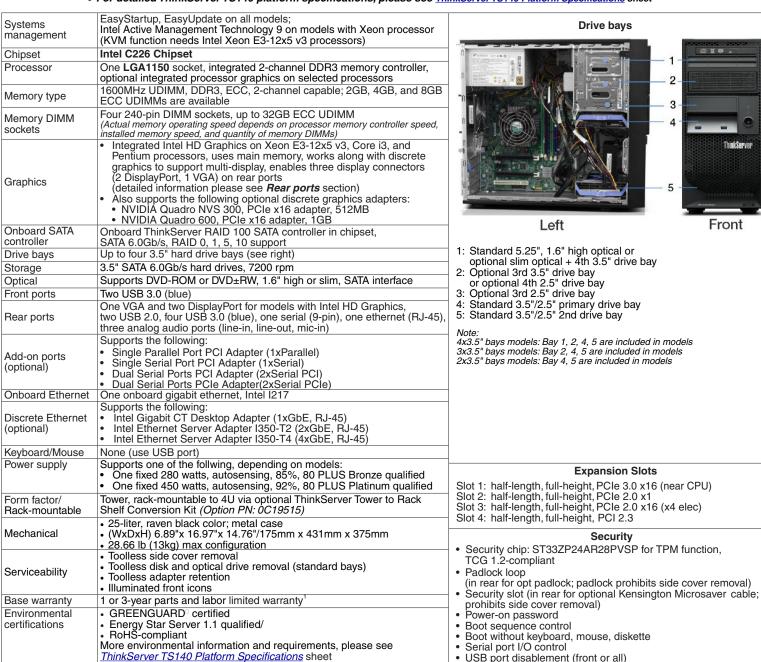
#### • For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet



Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A0000EUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1
70A0000FUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
70A0000GUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000HUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000JUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000KUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1
70A0000LUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### • For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet

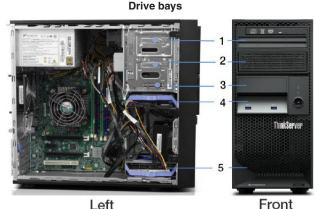


Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx2	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### • For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bay				
Chipset	Intel C226 Chipset	Proper areas				
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors					
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)					
Graphics	Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)  Also supports the following optional discrete graphics adapters:  NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB  NVIDIA Quadro 600, PCIe x16 adapter, 1GB					
Onboard SATA	Onboard ThinkServer RAID 100 SATA controller in chipset,	Left				
controller	SATA 6.0Gb/s, RAID 0, 1, 5, 10 support					
Drive bays	Up to four 3.5" hard drive bays (see right)	1: Standard 5.25", 1.6" high optical of				
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	optional slim optical + 4th 3.5" driv				
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay				
Front ports	Two USB 3.0 (blue)	3: Optional 3rd 2.5" drive bay				
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive b 5: Standard 3.5"/2.5" 2nd drive bay				
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe) One onboard gigabit ethernet, Intel I217	Note: 4x3.5" bays models: Bay 1, 2, 4, 5 are inc 3x3.5" bays models: Bay 2, 4, 5 are included 2x3.5" bays models: Bay 4, 5 are included				
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)					
Keyboard/Mouse	None (use USB port)					
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion				
Form factor/	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack	Slot 1: half-length, full-height, PCIe 3				
Rack-mountable	Shelf Conversion Kit (Option PN: 0C19515)	Slot 2: half-length, full-height, PCIe 2				
Mechanical	25-liter, raven black color; metal case     (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm     28.66 lb (12kg) max configuration	Slot 3: half-length, full-height, PCle 2 Slot 4: half-length, full-height, PCl 2.				
Serviceability	28.66 lb (13kg) max configuration     Toolless side cover removal     Toolless disk and optical drive removal (standard bays)     Toolless adapter retention     Illuminated front icons	Security     Security chip: ST33ZP24AR28PV5     TCG 1.2-compliant     Padlock loop     (in rear for opt padlock; padlock pro				
Base warranty	1 or 3-year parts and labor limited warranty	Security slot (in rear for optional Ke				
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS140 Platform Specifications sheet	prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, Serial port I/O control USB port disablement (front or				



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#### n Slots

e 3.0 x16 (near CPU) e 2.0 x1 e 2.0 x16 (x4 elec) 2.3

#### ity

- VSP for TPM function,
- prohibits side cover removal)
- Kensington Microsaver cable;
- iskette

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	NVS 300	RAID 10		Slim DVD±RW	1xParallel	2xIntel CT	450W	No	Foundation	1
	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Quadro 600	RAID 10		Slim DVD±RW	No	1xIntel CT	450W	No	Foundation	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

# • For detailed ThinkServer TS140 platform specifications, please see <u>ThinkServer TS140 Platform Specifications</u> sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bays
Chipset	Intel C226 Chipset	Married and with the second
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)  Also supports the following optional discrete graphics adapters:  NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB  NVIDIA Quadro 600, PCIe x16 adapter, 1GB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Left  1: Standard 5.25", 1.6" high optical or
Drive bays	Up to four 3.5" hard drive bays (see right)	optional slim optical + 4th 3.5" drive b
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	2: Optional 3rd 3.5" drive bay
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	or optional 4th 2.5" drive bay
Front ports	Two USB 3.0 (blue)	3: Optional 3rd 2.5" drive bay
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay Note:
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)	4x3.5" bays models: Bay 1, 2, 4, 5 are included 3x3.5" bays models: Bay 2, 4, 5 are included in 2x3.5" bays models: Bay 4, 5 are included in n
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion Slo Slot 1: half-length, full-height, PCle 3.0 x
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Slot 2: half-length, full-height, PCle 2.0 x Slot 3: half-length, full-height, PCle 2.0 x Slot 4: half-length, full-height, PCl 2.3
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>	Security
Serviceability	<ul> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal (standard bays)</li> <li>Toolless adapter retention</li> <li>Illuminated front icons</li> </ul>	Security chip: ST33ZP24AR28PVSP for TCG 1.2-compliant     Padlock loop (in rear for opt padlock; padlock prohibitions)     Security slot (in rear for optional Kensir
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	prohibits side cover removal)
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet	Power-on password     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)

# Front

e bay

luded in models led in models I in models

#### **Slots**

- .0 x16 (near CPU)
- .0 x1
- .0 x16 (x4 elec)

- SP for TPM function,
  - hibits side cover removal)
- ensington Microsaver cable;
- kette

# ThinkServer TS140 Platform Specifications - System Specifications (I of III)

Form factor   Tower, rack-mountable to 4U via ThinisGeneral Tower to Rack Shelf Conversion Kit (Caption PN: OCT9815)	Components	Specification												
Intel Active Management Technology 9 on models with Xeon processor (KVM Introdon needs intel Xeon E-31-26 V3 processors)			to 4U v	ia ThinkS	erver Towe	er to Rack S	helf Cor	nversion Kit (C	ption PN: 0C	19515)				
CVM function needs finel Xeon E3-12x6 v3 processors	Chipset													
Processor		(KVM function needs EasyStartup	Intel X	ennology s eon E3-12	9 on mode 2x5 v3 pro	ls with Xeor cessors)	n proces	sor						
Processor Number	Processor	One LGA1150 socket, supports one processo								d processors.				
Xaon E3-1285 v3		The following processo	rs are s	upported	:									
Xeon E3-1226 v3		Processor Number			Clock Speed		Cache			Processor Graphics				
Neon E3-1276 v3		Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4700				
Name		Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes					
Xeon E3-1245 v3 4 8 3.4 GHz 3.8 GHz 8 MB DDR3-1600 Yes Intel HD Graphics 4600 Xeon E3-1290 v3 4 8 3.4 GHz 3.6 GHz 8 MB DDR3-1600 Yes Xeon E3-1228 v3 4 4 3.2 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics 4600 Xeon E3-1228 v3 4 4 3.1 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics 4600 Xeon E3-1220 v3 4 4 3.1 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics 4600 Core i3-4330 2 4 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics 4600 Core i3-4330 2 4 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics 4600 Core i3-4330 2 2 4 3.4 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4600 Pentium G3420 2 2 3.3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4600 Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4600 Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4600 Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 X 2 Yes Intel HD Graphics Pentium G3420 X Yes		Xeon E3-1270 v3         4         8         3.5 GHz         3.9 GHz         8 MB         DDR3-1600         Yes												
Xeon E3-1240 v3														
Xeon E3-1226 v3														
Xeon E3-1225 v3		Xeon E3-1240 v3	·											
Xeon E3-1225 v3														
Xeon E3-1220 v3		Xeon F3-1225 v3	Intel HD Graphics 4600											
Core i3-4340 2 4 3.6 GHz 4 MB DDR3-1600 Yes Intel HD Graphics 4600 Core i3-4330 2 4 3.5 GHz 4 MB DDR3-1600 Yes Intel HD Graphics 4400 Core i3-4130 2 4 3.4 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4400 Pentium G3430 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4400 Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 1 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 1 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 1 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 Yes Intel HD Graphics Pentium G320 Y			-							milet i i B diapines i eee				
Core i3-4330 2 4 3.5 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4400 Pentium G3430 2 2 4 3.4 GHz 3 MB DDR3-1600 Yes Intel HD Graphics 4400 Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Note:  **Note:** All information is provided by Intel and may be changed at any time without note. The information herein is provided "as-is". Intel may update this information in non-scheduled. For elasts information, please see http://ark.lintel.com/.  **Memory type**  1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available  Memory plMM sockets  Four 240-pin DIMM sockets  Memory capacity  Whemory protection  Additional memory disclaimers  Onboard SATA Controller  **Onboard SATA Ratio 1.0 SATA controller in chipset, SATA 6.0Gb/s, RAID 0.1, 5.10 support.  Supports one 5.25' optical and two 3.5' disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5'/2.5' disk drive bays (pending 2.5' disk drives availability):  1: Standard 3.5'/2.5' 2nd drive bay  2: Optional 3rd 3.5' drive bay  3: Optional 3rd 2.5' drive bay  4: Standard 3.5'/2.5' 2nd drive bay  5: Standard 3.5'/2.5' 2nd drive bay  5: Standard 3.5'/2.5' 2nd drive bay  6: Standard optical and hard drive bays are included in models;  6: Standard optical and hard drive bays are included in models;  7: Standard 3.5'/2.5' 2nd drives only		110011 = 0 1==0 10				0.0 0112	-			Intel HD Graphics 4600				
Core i3-4130 2 4 3.4 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Hentium G3430 2 2 3.3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1333 Yes Intel HD Graphics Intel HD Graphics All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see http://ark.midl.com/.  Memory DIMM sockets Four 240-pin DIMM sockets  Memory DIMM sockets Four 240-pin DIMM sockets  Memory potention  Additional memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs  Onboard SATA Controller  Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs  Onboard SATA Controller  Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0.1, 5, 10 support  Supports one 5.25° optical and two 3.5° disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5°12.5° disk drive bays (pending 2.5° disk drives availability):  1: Standard 3.5°1.5° drive bay or optional slim optical										·				
Pentium G3430 2 2 3.3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 Xes Intel HD Graphics Pentium G3220 Xes Intel HD Graphics All Intel Intel Management Gasta Pentium G3220 Xes Intel HD Graphics Pentium G3220 Xes Intel HD G7220 Xes Intel HD G7220 Xes Intel HD G7220 Xes Intel HD G7220 Xes Intel HD G72					010 0111					·				
Pentium G3420 2 2 3.2 GHz 3 MB DDR3-1600 Yes Intel HD Graphics Pentium G3220 2 2 3 GHz 3 MB DDR3-1333 Yes Intel HD Graphics Notes: All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is".  Memory type 1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available  Memory DIMM sockets Four 240-pin DIMM sockets Memory protection Memory protection Memory protection Additional Memory disclaimers Onboard SATA Controller  • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support  Onboard Sci optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4fin 3.5" drive bay or optional all slim optical + 4fin 3.5" drive bay  1: Standard 3.5"/2.5" primary drive bay  5: Standard 3.5"/2.5" 2nd drive bay  1: Standard 3.5"/2.5" 2nd drive bay  5: Standard optical and hard drive bays are included in models; optional gdrives only														
Pentium G3220 2 2 3 GHz 3 MB DDR3-1333 Yes Intel HD Graphics  Notes: All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is".  Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/  Memory type 1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available  Memory poliMi sockets Four 240-pin DIMM sockets  Memory potention  Additional memory disclaimers Onboard SATA Ontroller  • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs  Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support  Onboard Set School and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay  3: Optional 3rd 3.5" drive bay  4: Standard 3.5"/2.5" primary drive bay  5: Standard optical and hard drive bays are included in models;  optional optical and hard drive bays are included in models;  optional optical and hard drive bays are available on models with the corresponding drives only										•				
Notes:  All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see <a href="http://ark.intel.com/">http://ark.intel.com/</a> Memory type  1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available  Memory DIMM sockets  Memory protection  Additional memory disclaimers  Onboard SATA controller  • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs  Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 supports  Supports one 5.25 optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5'/2.5" disk drive bays (pending 2.5" disk drives availability):  1			·											
Memory DIMM sockets  Memory capacity  Memory protection  Additional memory disclaimers  Onboard SATA controller  Supports one 5.25° optical and four 3.5°/2.5° disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5°/2.5° disk drive bays (pending 2.5° drive bay  Drive bays  Drive bays  Four 240-pin DIMM sockets  Four 240-pin DIMM sockets  Up to 32GB (8GBx4)  Memory capacity  Additional memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs  Onboard SATA controller  Supports one 5.25° optical and two 3.5° disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5°/2.5° disk drive bays (pending 2.5° disk drives availability):  1: Standard 5.25°, 1.6° high optical or optional slim optical + 4th 3.5° drive bay  2: Optional 3rd 3.5° drive bay  3: Optional 3rd 3.5° drive bay  4: Standard 3.5°/2.5° primary drive bay  5: Standard 3.5°/2.5° 2nd drive bay  5: Standard 3.5°/2.5° 2nd drive bay  6: Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only		Notes:	Notes: All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is"											
Memory capacity  Memory protection  Additional memory disclaimers  Onboard SATA controller  Onboard SATA controller  Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical 4th 3.5" drive bay  Orboard SATA controller  Onboard SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support  Supports one 5.25" optical and two 3.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay  or optional 3rd 3.5" drive bay  3: Optional 3rd 2.5" drive bay  4: Standard 3.5"/2.5" primary drive bay  5: Standard 3.5"/2.5" 2nd drive bay  Thoses:  • Standard optical and hard drive bays are included in models: optional grives only	Memory type	1600MHz UDIMM, DDF	R3, EC	C, 2-chan	nel capabl	e; 2GB, 4GI	B, and 8	GB ECC UDIN	/Ms are avail	able				
Memory capacity  Memory protection  Additional memory disclaimers  Onboard SATA controller  Onboard SATA controller  Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical 4th 3.5" drive bay  Orboard SATA controller  Onboard SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support  Supports one 5.25" optical and two 3.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay  or optional 3rd 3.5" drive bay  3: Optional 3rd 2.5" drive bay  4: Standard 3.5"/2.5" primary drive bay  5: Standard 3.5"/2.5" 2nd drive bay  Thoses:  • Standard optical and hard drive bays are included in models: optional grives only	Memory DIMM sockets	Four 240-pin DIMM soc	kets	-										
Memory protection Additional memory disclaimers Onboard SATA controller  Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay or optional slim optical + 4th 3.5" drive bay 3: Optional 3rd 2.5" drive bay 3: Optional 3rd 2.5" drive bay 5: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay 5: Standard 3.5"/2.5" 2nd drive bay 5: Standard optical and hard drive bays are included in models: optional optical and hard drive bays are available on models with the corresponding drives only	ļ ,	·												
Additional memory disclaimers  onboard SATA controller  Onboard SATA controller  Onboard SATA controller  Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0. 1, 5, 10 support  Supports one 5.25° optical and two 3.5° disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5°/2.5° disk drive bays (pending 2.5° disk drives availability):  1: Standard 5.25°, 1.6° high optical or optional slim optical + 4th 3.5° drive bay or optional slim optical + 4th 3.5° drive bay or optional 4th 2.5° drive bay  3: Optional 3rd 2.5° drive bay  4: Standard 3.5°/2.5° primary drive bay  5: Standard 3.5°/2.5° 2nd drive bay  5: Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only	, , ,	, , ,												
Onboard SATA Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support  Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay or optional slim optical + 4th 3.5" drive bay or optional slim optical + 4th 3.5" drive bay or optional slim optical 4th 2.5" drive bay  2: Optional 3rd 2.5" drive bay or optional slim optical 4th 2.5" drive bay  3: Optional 3rd 3.5"/2.5" primary drive bay  5: Standard 3.5"/2.5" 2nd drive bay  Notes:  • Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only	, ,													
Drive bays  RAID 0, 1, 5, 10 support  Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay 3: Optional 3rd 2.5" drive bay 4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay  Notes:  • Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only	memory disclaimers								emory speed, a	nd quantity of memory DIMMs				
Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability):  1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay 3: Optional 3rd 2.5" drive bay 4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay 5: Standard 3.5"/2.5" 2nd drive bay  Notes:  • Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only				00 SATA c	ontroller in	n chipset, S	ATA 6.00	Gb/s,						
<ul> <li>Image above is for reference only. Model in this image contains optional slim optical + 3.5" 2nd hard drive bay with supplemental fan (Bay 1) and optional 3.5" 3rd hard drive bay (Bay 2)</li> <li>Optional slim optical + 3.5" drive bay (Bay 1) and optional 3rd 2.5" drive bay (Bay 3) can not be supported concurrently on one model.</li> </ul>		Notes:  Standard optical and har optional optical and har optional optical and har optional 3.5" sfor hard gray hard	eft  d drive be drive only the barries on the barries of the barries on the barries on the barries on the barries of the barries on the barries of the b	pays are in ays are avay. Model in Bay 2)	cluded in mailable on methis image of	bays (pend	FI	ront  anding drives on applical + 3.5" 2nd	1: Standard optional services or optional services 3: Optional services 4: Standard 5: Standard 5: Standard services or optional services of the services of t	5.25", 1.6" high optical or slim optical + 4th 3.5" drive bay 3rd 3.5" drive bay 3rd 2.5" drive bay 3rd 2.5" drive bay 3.5"/2.5" primary drive bay 3.5"/2.5" 2nd drive bay				

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# ThinkServer TS140 Platform Specifications (II of III)

Components	Specification		
Optical	Supports DVD±RW or DVD ROM, 1.6		
•	<ul> <li>Integrated Intel HD Graphics on Xe</li> </ul>	eon E3-12x5 v3, Core i3, and Pentium proc	essors, uses main memory,
	works along with discrete graphics	to support multi-display, 2 DisplayPort, 1 VGA) on rear ports	
Graphics	(detailed information please see <b>R</b>		
·	<ul> <li>Also supports the following options</li> </ul>	al discrete graphics adapters:	
	<ul> <li>NVIDIA Quadro NVS 300, PCIe</li> <li>NVIDIA Quadro 600, PCIe x16 a</li> </ul>		
Front ports	Two USB 3.0 (blue)	luapier, 1GB	
_ '	One VGA and two DisplayPort for mo		
Rear ports			analog audio ports (line-in, line-out, mic-in)
	Slot 1: half-length, full-height, PCle 3. Slot 2: half-length, full-height, PCle 2.		
Expansion Slots	Slot 3: half-length, full-height, PCle 2.		
	Slot 4: half-length, full-height, PCI 2.3	3 ` ´	
Onboard Ethernet	One onboard gigabit ethernet, Intel I2	217	
Discrete Ethernet	Supports the following:  Intel Gigabit CT Desktop Adapter	(1vGhE R L45)	
(optional)	<ul> <li>Intel Ethernet Server Adapter 1350</li> </ul>		
	<ul> <li>Intel Ethernet Server Adapter I350</li> </ul>	)-T4 (4xGbE, RJ-45)	
Keyboard/mouse	None (use USB port)		
Power supply	Supports one of the follwing, depend  One fixed 280 watts, autosensing	ing on models: 85% PSU, 80 PLUS Bronze qualified	
i ower supply		92% PSU, 80 PLUS Platinum qualified	
	Security chip: ST33ZP24AR28PVS	SP for TPM function, TCG 1.2-compliant	
		ck; padlock prohibits side cover removal)	
0	Security slot (in rear for optional Ke     Power-on password	ensington Microsaver cable; prohibits side c	over removal)
Security	Boot sequence control		
	Boot without keyboard, mouse, disl	kette	
	<ul><li>Serial port I/O control</li><li>USB port disablement (front or all)</li></ul>		
	Raven black color; metal case		
	• 6.89"W x 16.97"D x 14.76"H		
Mechanical	<ul> <li>175mm W x 431mm D x 375mm H</li> <li>28.66 lb (13kg) max configuration</li> </ul>		
	• 25-liter		
	Toolless side cover removal	and (stored and bosse)	
Serviceability	<ul> <li>Toolless disk and optical drive remo</li> <li>Toolless adapter retention</li> </ul>	ovai (standard bays)	
	Illuminated front icons		
Environmental	GREENGUARD certified  Fragge Star Corner 1 1 qualified		
certifications	<ul><li>Energy Star Server 1.1 qualified</li><li>RoHS-compliant</li></ul>		
EMC	FCC Class A		
240VA	Supports		
Temperature -	50 °F to 95 °F (10 °C to 35 °C)		
operating .	30 1 10 93 1 (10 10 10 33 10)		
Temperature - non operating	-10 °C to 60 °C		
(no package)			
Temperature -			
non operating (with package)	-40 °C to 70 °C		
Altitude - operating	Supported Altitude (unpressurized): 0	0-10000ft (0-3048m)	
Humidity - operating	10%~80%, non-condensing	, 1000011 (0 0040111)	
Humidity - operating	1070 -0070, Horr condensing		
non operating	10%~90%, non-condensing		
(no package)	_		
Humidity - non operating	10%~90%, non-condensing		
(with package)	The state of the s		
	Category	Min Configuration	Best Configuration
	CPU	1 CPU	1 CPU
	Optical Drive	0 DVD	1 DVD
	Drive Bays	Up to one	Up to three
Acoustic noise	HDD	1x 500GB SATA 1x 2GB UDIMM	3x 500GB SATA
(idle/working mode)	Memory PSU	1X 2GB ODIMM 280W	1x 2GB UDIMM 450W
	RAID	Embedded SATA	Embedded RAID
	Add-on card	No	1xVGA
	Sound Pressure (operating)	26 dB(A)	35 dB(A)
	Sound Pressure (idle)	25 dB(A)	34 dB(A)
	, ,	. , ,	, ,

# ThinkServer TS140 Platform Specifications - System Specifications (III of III)

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see <u>S-TS1</u> and <u>S-TS3</u> sheet
Preloaded operating systems	<ul> <li>Windows Server 2012 Foundation</li> <li>Windows Server 2012 Essentials</li> <li>Windows Server 2012 Standard</li> </ul>
Supported operating systems and virtualization software	Windows 7 Windows 8 Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Small Business Server 2011 Essentials Windows Small Business Server 2011 Standard Windows Small Business Server 2011 Premium Add-On Notes:  1. Supported only, no preloaded models 2. Windows 7 and Windows 8 are not supported by EasyStartup

# ThinkServer TS140 Optional Configurations

Memory	
ThinkServer 2GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19498
ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19499
ThinkServer 8GB DDR3L-1600MHz (2RX8) ECC UDIMM	0C19500
Disk Drive	
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19501
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19502
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19503
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19504
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19505
Connectivity	
ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
ThinkServer CT2 1Gbps Single Port Base-T Ethernet Adapter by Intel	4XC0F28725
Parallel/Serial Port Adapter	
ThinkServer Single Parallel Port PCI Adapter	0C19508
ThinkServer Single Serial Port PCI Adapter	0C19509
ThinkServer Dual Serial Port PCI Adatper	0C19510
ThinkServer Dual Serial Port PCIe Adatper	0C19511
Graphics	
ThinkServer 1GB Quadro 600 Graphic Adapter by NVIDIA	0C19512
ThinkServer 512MB NVS 300 PCIe x16 Graphic Adapter by NVIDIA	0C19513
3.5" Hard Drive Conversion Kit	
ThinkServer 3.5" HDD to 5.25" Tray Convertor Kit	0C19514
ThinkServer 3.5" HDD to 5.25" Tray Convertor with Slim ODD Kit	0C19529
Tower to Rack Shelf Conversion Kit	
ThinkServer Tower to Rack Shelf Conversion Kit	0C19515

For more information on server accessories, please visit: www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

# ThinkServer TS440 - Overview

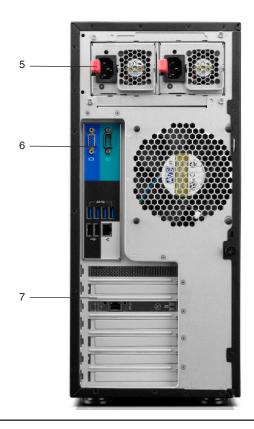


#### Rear view

- Power Supply: Up to two redundant 450 watts 80 PLUS Gold or fixed one 450 watts 80 PLUS Platinum
- 6. Rear I/O: 2 USB 2.0 4 USB 3.0(blue) 1 serial (9-pin) 1 RJ-45 (GbE) 1 VGA (for Intel HD Graphics)
- 7. 1 PCIe 3.0 x16 (with optional RAID adapter)
  1 PCIe 2.0 x1
  1 PCIe 2.0 x16 (x4 elec, with optional ethernet adapter)
  1 PCI

# Front view

- 1. Front I/O: 2 USB 3.0 (blue)
- 2. Power Button
- Two 5.25" optical drive bays (up to one optical on models with onboard SATA controller)
- 4. Eight 3.5" hot-swap drive bays (Also supports: 4 x 3.5" direct cable bays, or 4 x 3.5" hot-swap bays, or 8 x 2.5" hot-swap bays)



#### Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3 family
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to eight hard drive bays

#### Mechanical

- · Tower, business black color, metal case
- Rack-mountable to 5U
- W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
- 61.7 lb (28kg) max configuration

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ0005US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Foundation	1x450W (hot-swap, redundant with 2)	3
70AQ0006US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Essentials	1x450W (hot-swap, redundant with 2)	3
70AQ0007US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Standard	1x450W (hot-swap, redundant with 2)	3
70AQ0009UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	1
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000BUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000CUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

# • For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

	T	
Systems	Intel Active Management Technology 9     (KVM function poods Intel Year E3 12XE v3 processors)	Optical Bays
Systems management	(KVM function needs Intel Xeon E3-12X5 v3 processors)  • EasyStartup	Two 5.25" optical bays for all models
management	EasyUpdate	(Up to one optical on onboard SATA controller models)
Chipset	Intel C226 Chipset	Hard Drive Bays
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller,	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
	optional integrated Intel HD Graphics on selected processors	<ul> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	• Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM	
sockets	(Actual memory operating speed depends on processor memory controller speed,	
	installed memory speed, and quantity of memory DIMMs)  • Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors	
	Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory.	
0	works along with discrete graphics to support multi-display,	
Graphics	enables VGA connector on rear	
	(detailed information please see <i>Rear ports</i> section)	
	Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA	
controller	6.0Gb/s, RAID 0, 1, 5, 10 support Supports the following:	
	ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus,	- 150 Su
	SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support;	
	optional upgrade key for ThinkServer RAID 500 adapter,	
Discreted SATA/	add RAID 5, 50 support	
SAS controller	ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	
(optional)	RAID 0, 1, 5, 6, 10, 50, 60 support;	
	optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID	
	700 adapter	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	Notes:	
Ontinal	RAID 50 and 60 are supported on 8 hard drive bays models only	BA b
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case     W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	• 61.7 lb (28kg) max configuration
·	Supports the following:	Rack-mountable to 5U
	Single Parallel Port PCI Adapter (1xParallel)	(via optional Tower to Rack Shelf Conversion Kit,
Add-on ports	Single Serial Port PCI Adapter (1xSerial)	not included in standard model)
(optional)	Dual Serial Ports PCI Adapter (2xSerial PCI)	Toolless side cover removal     Toolless disk and optical drive removal
	Dual Serial Ports PCle Adapter (2xSerial PCle)	Toolless adapter retention
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	Illuminated front icons
Discrete Ethernet	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)	Expansion Slots
(optional)	Intel Edgabit Of Besitop Adapter (TxdbE, 110-45)     Intel Ethernet Server Adapter (350-T2 (2xGbE, RJ-45))	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
(optional)	Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Slot 2: half-length, full-height, PCIe 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the following, depending on models:	Slot 4: half-length, full-height, PCI 2.3
	One fixed 450 watts, universal, 80 PLUS Platinum qualified	Security
	• Up to two redundant 450 watts, two maximum, rear access, hot-swap,	Security chip: ST33ZP24AR28PVSP for TPM function,
Paga warranti	80 PLUS Gold qualified, redundant with two power supplies	TCG 1.2-compliant
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	Administrator password
	GREENGUARD certified     Energy Star Server 1.1 qualified	User password
Environmental	RoHS-compliant	Front panel key lock     Post assumes central
certifications	More environmental information and requirements, please see	Boot sequence control     Boot without keyboard, mouse, diskette
	ThinkServer TS440 Platform Specifications sheet	Serial port I/O control
		USB port disablement (front or all)
	I	

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ000DUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000GUX	Xeon E3-1275 v3 (4C/3.5GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	1
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	P4600	4x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

# • For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) EasyStartup EasyUpdate Intel C226 Chipset  One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors  1600MHz UDIMM, DDR3, ECC, 2-channel capable Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)  Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors,	Optical Bays  Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)  Hard Drive Bays  Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)  Four 3.5" hot-swap hard drive bays (4x3.5" HS)  Eight 3.5" hot-swap hard drive bays (8x3.5" HS)  Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
EasyStartup     EasyUpdate     Intel C226 Chipset  One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors  1600MHz UDIMM, DDR3, ECC, 2-channel capable  Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	(Up to one optical on onboard SATA controller models)  Hard Drive Bays  Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)  Four 3.5" hot-swap hard drive bays (4x3.5" HS)  Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
EasyUpdate     Intel C226 Chipset     One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors     1600MHz UDIMM, DDR3, ECC, 2-channel capable     Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	<ul> <li>Hard Drive Bays</li> <li>Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)</li> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
Intel C226 Chipset  One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors  1600MHz UDIMM, DDR3, ECC, 2-channel capable  Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	<ul> <li>Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)</li> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
optional integrated Intel HD Graphics on selected processors 1600MHz UDIMM, DDR3, ECC, 2-channel capable Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	<ul> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
1600MHz UDIMM, DDR3, ECC, 2-channel capable Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
(Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section) • Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
<ul> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul>	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Two USB 3.0 (blue)	Tower, business black color, metal case
One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm     61.7 lb (28kg) max configuration     Rack-mountable to 5U
Supports the following:  Single Parallel Port PCI Adapter (1xParallel)  Single Serial Port PCI Adapter (1xSerial)  Dual Serial Ports PCI Adapter (2xSerial PCI)  Dual Serial Ports PCIe Adapter (2xSerial PCIe)	<ul> <li>(via optional Tower to Rack Shelf Conversion Kit, not included in standard model)</li> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal</li> <li>Toolless adapter retention</li> </ul>
	Illuminated front icons
<ul> <li>Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)  Slot 2: half-length, full-height, PCle 2.0 x1
None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security chip: ST33ZP24AR28PVSP for TPM function,
1 or 3-year parts and labor limited warranty <sup>1</sup>	TCG 1.2-compliant  • Administrator password
GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications sheet	Administrator password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)
	(detailed information please see <i>Rear ports</i> section)  Supports optional discrete NVIDIA NVS 300 adapter, PCle x1, 512MB Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support Supports the following:  ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support  ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter  **Notes:** **RAID 50 and 60 are supported on 8 hard drive bays models only** Supports DVD±RW or DVD ROM, 1.6" high, SATA interface  Two USB 3.0 (blue) One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)  Supports the following:  **Single Parallel Port PCI Adapter (1xParallel)  **Single Parallel Port PCI Adapter (1xSerial)  **Dual Serial Ports PCI Adapter (2xSerial PCI)  **Dual Serial Ports PCI Adapter (2xSerial PCI)  **Dual Serial Ports PCI Adapter (2xSerial PCI)  **Dual Serial Ports PCI Adapter (1xGbE, RJ-45)  **Intel Ethernet Server Adapter 1350-T2 (2xGbE, RJ-45)  **Intel Ethernet Server Adapter 1350-T4 (4xGbE, RJ-45)  **Intel Ethernet Server Adapter 1350-T4 (4xGbE, RJ-45)  **None (use USB port)  Supports one of the follwing, depending on models:  **One fixed 450 watts, universal, 80 PLUS** Platinum qualified  ***Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies  1 or 3-year parts and labor limited warranty¹  ***GREENGUARD** certified  ***Energy Star Server 1.1 qualified  ***Power PCI Power PCI

# ThinkServer TS440 (70AN) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AN0001UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	1
70AN0002UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

# • For detailed ThinkServer TS440 platform specifications, please see ThinkServer TS440 Platform Specifications sheet

		T. T
Systems management	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)     EasyStartup	Optical Bays  Two 5.25" optical bays for all models
managomoni	• EasyUpdate	(Up to one optical on onboard SATA controller models)
Chipset	Intel C226 Chipset	Hard Drive Bays
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	<ul> <li>Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)</li> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)     Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	<ul> <li>Supports the following:</li> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul>	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm     1.7 lb (28kg) max configuration
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)	Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	Illuminated front icons
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)  Slot 2: half-length, full-height, PCle 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security  Security  TOO 13 Approximate Approximat
Base warranty	1 or 3-year parts and labor limited warranty	TCG 1.2-compliant
Environmental certifications	GRENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications     sheet	Administrator password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)
Soo footnotes for in	nportant warranty information	© Lenovo

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AM0000US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	2GBx2	Intel HD P4600	4x3.5" DC	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD	No	1xIntel CT	Foundation	1x450W (hot-swap, redundant with 2)	1
70AM0001US	Xeon E3-1275 v3 (4C/3.5GHz/ 8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	8x3.5" HS	RAID 500+key (discrete, 0/1/5/10/50)	RAID 50	8x2TB 3.5" SATA	2xDVD±RW	No	1xIntel CT	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0002UX	Xeon E3-1280 v3 (4C/3.6GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx3	NVS 300	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 6	3x600GB 2.5" SAS	1xDVD	No	1x350-T4	No	1x450W (hot-swap, redundant with 2)	1
70AM0003US	Xeon E3-1285 v3 (4C/3.6GHz/ 8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4700	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 60	8x900GB 2.5" SAS	1xDVD±RW	No	1x350-T2	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0004UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

# • For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

Systems	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)	Optical Bays  Two 5.25" optical bays for all models
management	EasyStartup	(Up to one optical on onboard SATA controller models)
Chipset	EasyUpdate     Intel C226 Chipset	Hard Drive Bays
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	<ul> <li>Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)</li> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)</li> <li>Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB</li> </ul>	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	<ul> <li>Supports the following:</li> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul> Notes:	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue) One VGA for models with Intel HD Graphics,	<ul> <li>Tower, business black color, metal case</li> <li>W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm</li> </ul>
Rear ports	two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	61.7 lb (28kg) max configuration
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCI Adapter (2xSerial PCI)	<ul> <li>Rack-mountable to 5U         (via optional Tower to Rack Shelf Conversion Kit, not included in standard model)</li> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal</li> <li>Toolless adapter retention</li> </ul>
Onboard Ethernet	One onboard gigabit ethernet, Intel I217 Supports the following:	Illuminated front icons
Discrete Ethernet (optional)	<ul> <li>Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	Administrator password
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications sheet	User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AL0000US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	8GBx3	NVS 300	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 5	3x3TB 3.5" SATA	1xDVD±RW	No	1x350-T2	Foundation	Fixed 450W (non-hot swap, no redundant)	1
70AL0002UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	1x500GB 3.5" SATA	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3
70AL0003UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

# • For detailed ThinkServer TS440 platform specifications, please see ThinkServer TS440 Platform Specifications sheet

Systems management	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)     EasyStartup	Optical Bays  Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)						
01:	• EasyUpdate	Hard Drive Bays						
Chipset Processor	Intel C226 Chipset  One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	<ul> <li>Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)</li> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> </ul>						
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	<ul> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> <li>Eight 2.5" hot-swap hard drive bays (8x2.5" HS)</li> </ul>						
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	Eight 2.5 Hor-swap flatd drive bays (8x2.5 HS)						
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)</li> <li>Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB</li> </ul>							
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support							
Discreted SATA/ SAS controller (optional)	<ul> <li>Supports the following:</li> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul>	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS						
	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only							
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical						
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case						
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm     61.7 lb (28kg) max configuration     Rack-mountable to 5U						
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel)  Single Serial Port PCI Adapter (1xSerial)  Dual Serial Ports PCI Adapter (2xSerial PCI)  Dual Serial Ports PCIe Adapter (2xSerial PCIe)  One onboard gigabit ethernet, Intel I217	(via optional Tower to Rack Shelf Conversion Kit, not included in standard model)  Toolless side cover removal  Toolless disk and optical drive removal  Toolless adapter retention						
Official Effettier	Supports the following:	Illuminated front icons						
Discrete Ethernet (optional)	<ul> <li>Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)  Slot 2: half-length, full-height, PCle 2.0 x1						
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)						
Power supply	Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security  Security chip: ST33ZP24AR28PVSP for TPM function,						
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	TCG 1.2-compliant  • Administrator password						
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications     sheet	User password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)						

# ThinkServer TS440 Platform Specifications - I of III

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information is provided I may update this information MHz UDIMM, DDF in 240-pin DIMM social to 32GB (8GBx4) Coctual memory operating coord ThinkServer FID 0, 1, 5, 10 support the following: ThinkServer RAID 50 poports the following: ThinkServer RAID 50 population upgrade keyidd RAID 5, 50 supported in the supported the sup	R3, ECC ckets ag speed RAID 10 rt 00 adap / for Thir	depends of 00 SATA cotter (LSI \$	on processor	e; 2GB, 4G  r memory cor n chipset, S.  8i), PCI Exp	B, and 80  atroller specification of the second of the sec	GB ECC UDIN	MMs are availa	able and quantity of memory DIMMs
tr 240-pin DIMM soc to 32GB (8GBx4) C ctual memory operating poard ThinkServer F ID 0, 1, 5, 10 support poorts the following: hinkServer RAID 50, potional upgrade key	ckets  og speed RAID 10 rt  00 adap / for Thir	depends o	on processon controller in	r memory con n chipset, S.	ntroller spe	eed, installed me	emory speed, a	and quantity of memory DIMMs
to 32GB (8GBx4)  C  ctual memory operating  coard ThinkServer F ID 0, 1, 5, 10 support  poports the following:  hinkServer RAID 50,  ptional upgrade key  idd RAID 5, 50 support  idd RAID 5, 50 support	ng speed RAID 10 rt 00 adap y for Thir	oter (LSI S	controller in	n chipset, S	ATA 6.0G	ib/s,		
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pooard ThinkServer F ID 0, 1, 5, 10 supports the following: hinkServer RAID 50 potional upgrade key	RAID 10 rt 00 adap / for Thir	oter (LSI S	controller in	n chipset, S	ATA 6.0G	ib/s,		
ID 0, 1, 5, 10 supports the following: ThinkServer RAID 50 optional upgrade key add RAID 5, 50 supports	rt 00 adap / for Thir port	oter (LSI S	SAS 9240-	8i), PCI Exp			/s, SAS 6.0G	sh/e RAID 0 1 10 eunnort
pports the following: hinkServer RAID 50 optional upgrade key add RAID 5, 50 supp	00 adap / for Thir oort				oress bus	s, SATA 6.0Gb	/s, SAS 6.0G	sh/s RAID 0 1 10 support:
<ul> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> <li>Notes:  RAID 50 and 60 are supported on 8 hard drive bays models only</li> </ul>								
3 x 3.5" HS: Four 3.5 3 x 3.5" HS: Eight 3.5 3 x 2.5" HS: Eight 2.5	urd drive 5" hard c 5" hot-sv 5" hot-sv	e bays, on drive bays wap hard wap hard wap hard	e of the fo s, no hot-s drive bays I drive bays	llowing are wap, direct (onboard F s (needs dis	supporte cable (o RAID 100 corted RA	ed: nboard RAID controller for AID adapter, s	100 controller SATA, discret upports SATA	r, SATA only) te RAID adapter for SATA/SAS √SAS)
	x 3.5" HS: Four 3.5 x 3.5" HS: Eight 3.	x 3.5" HS: Four 3.5" hot-sv x 3.5" HS: Eight 3.5" hot-sv x 2.5" HS: Eight 2.5" hot-sv x 2.5" hot-swap 4 x 3	x 3.5" HS: Four 3.5" hot-swap hard x 3.5" HS: Eight 3.5" hot-swap hard x 2.5" HS: Eight 2.5" hot-swap hard x 2.5" hot-swap hard 4 x 3.5" hot-swap hard x 2.5" hot-swap hard x 2.5" hot-swap hard x 2.5" hot-swap hard x 3.5" hot-swap hard x 3.5	x 3.5" HS: Four 3.5" hot-swap hard drive bays x 3.5" HS: Eight 3.5" hot-swap hard drive bays x 2.5" HS: Eight 2.5" hot-swap hard drive bays x 2.5" hot-swap hard drive bays 4 x 3.5" hot-swap	x 3.5" HS: Four 3.5" hot-swap hard drive bays (onboard F x 3.5" HS: Eight 3.5" hot-swap hard drive bays (needs dis x 2.5" HS: Eight 2.5" hot-swap hard drive bays (needs dis x 2.5" hot-swap hard dri	x 3.5" HS: Four 3.5" hot-swap hard drive bays (onboard RAID 100 x 3.5" HS: Eight 3.5" hot-swap hard drive bays (needs discrted RA x 2.5" HS: Eight 2.5" hot-swap hard drive bays (needs discrted RA x 2.5" HS: Eight 2.5" hot-swap hard drive bays (needs discrted RA x 2.5" hot-swap hard drive bays (needs discrted RA x 2.5" hot-swap 4 x 3.5" hot-swap 8 x 3.5" hot-swap	x 3.5" HS: Four 3.5" hot-swap hard drive bays (onboard RAID 100 controller for x 3.5" HS: Eight 3.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" HS: Eight 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID adapter, st x 2.5" hot-swap hard drive bays (needs discrted RAID	x 2.5" hot-swap 4 x 3.5" hot-swap 8 x 3.5" hot-swap

# ThinkServer TS440 Platform Specifications - II of III

Components	Specification							
Optical	Supports DVD±RW or DVD ROM, 1.6	high, SATA interface						
		on E3-12X5 v3 processors, uses main mem	ory,					
	works along with discrete graphics enables VGA connector on rear	to support multi-display,						
Graphics	(detailed information please see <i>Re</i>	ear ports section)						
	<ul> <li>Also supports the following optional</li> </ul>	discrete graphics adapters:						
Front ports	NVIDIA NVS 300, PCIe x1 adapte Two USB 3.0 (blue)	er, otzmb						
	One VGA for models with Intel HD Gra	aphics,						
Rear ports	two USB 2.0, four USB 3.0 (blue), one							
	Supports the following:	5 11 0						
Add-on ports	<ul> <li>Single Parallel Port PCI Adapter (1)</li> <li>Single Serial Port PCI Adapter (1xS)</li> </ul>							
(optional)	<ul> <li>Dual Serial Ports PCI Adapter (2xSerial PCI)</li> </ul>							
	Dual Serial Ports PCIe Adapter (2xSerial PCIe)							
	Slot 2: half-length, full-height, PCIe 3.0	Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1						
Expansion Slots	Slot 3: half-length, full-height, PCIe 2.0							
	Slot 4: half-length, full-height, PCI 2.3							
Onboard Ethernet		One onboard gigabit ethernet, Intel I217						
Discrete Ethernet	<ul> <li>Intel Gigabit CT Desktop Adapter (*)</li> </ul>	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)						
(optional)	Intel Ethernet Server Adapter 1350-     Intel Ethernet Server Adapter 1350-	T2 (2xGbE, RJ-45)						
Keyboard/mouse	Intel Ethernet Server Adapter I350- None (use USB port)	14 (4XGDE, MJ-45)						
neyboatu/1110use	None (use USB port) Supports one of the follwing, depending	ng on models:						
Power supply	<ul> <li>One fixed 450 watts, universal, 80 l</li> </ul>	PĽUS <sup>®</sup> Platinum qualified						
	<u> </u>		6 Gold qualified, redundant with two power supplies					
	<ul><li>Security chip: \$1332P24AR28PVSF</li><li>Administrator password</li></ul>	of for TPM function, TCG 1.2-compliant						
	User password							
Security	<ul><li>Front panel key lock</li><li>Boot sequence control</li></ul>							
	Boot sequence control     Boot without keyboard, mouse, diskette							
	Serial port I/O control							
	<ul> <li>USB port disablement (front or all)</li> <li>Tower, business black color, metal call</li> </ul>	ase						
Mechanical	• W x H (without foot) x D = 7.68"/195							
Wiconamoar	61.7 lb (28kg) max configuration     Rack-mountable to 5U							
	Toolless side cover removal							
Serviceability	Toolless disk and optical drive remove	/al						
,	Toolless adapter retention     Illuminated front icons							
Environmental	GREENGUARD certified							
certifications	Energy Star Server 1.1 qualified  BallS compliant							
EMC	RoHŠ-compliant     FCC Class A							
240VA	Supports							
Temperature -								
operating	50 °F to 95 °F (10 °C to 35 °C)							
Temperature -	-10 °C to 60 °C							
non operating (no package)	-10 0 10 00 0							
Temperature -								
non operating (with package)	-40 °C to 70 °C							
Altitude - operating	Supported Altitude (unpressurized): 0-	.10000ft (0-3048m)						
Humidity - operating	10%~80%, non-condensing							
Humidity -								
non operating	10%~90%, non-condensing							
(no package) Humidity -								
non operating	10%~90%, non-condensing							
(with package)								
	Category	Mainstream Configuration	Full Configuration					
	CPU	Xeon	Xeon					
	Optical Drive	DVD-ROM	DVD-ROM					
	HDD Controller	onboard SATA	SAS Controller					
	HDD Bays	4 x 3.5" SATA (direct cable)	8 x 3.5" SAS (hot-swap)					
Acoustic noise (idle/working mode)								
(idie/working mode)	Memory PSU	1 x 2GB UDIMM ECC Fixed	4 x 4GB UDIMM ECC Redundant					
	Management	Basic IPMI mgmt, reporting	Basic IPMI mgmt, reporting					
	RAID	SATA RAID 0/1	SAS RAID 5					
	Sound Pressure (operating)	40.5 dB(A)	42.0 dB(A)					
	Sound Pressure (idle)	32.0 dB(A)	38.0 dB(A)					

# ThinkServer TS440 Platform Specifications - III of III

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see <u>S-TS1</u> and <u>S-TS3</u> sheet
Preloaded operating systems	<ul> <li>Windows Server 2012 Foundation</li> <li>Windows Server 2012 Essentials</li> <li>Windows Server 2012 Standard</li> </ul>
Supported operating systems and virtualization software	Windows Server 2008 R2 Standard     Windows Server 2012 Datacenter     Windows Server 2012 Datacenter     Windows Server 2011 Essentials     Windows Small Business Server 2011 Standard     Windows Small Business Server 2011 Premium Add-On     Red Hat Enterprise Linux 6.4     VMware ESXi 5.1 U1 (Discrete RAID controller, add-on ethernet controller, and Intel Xeon E3-12x5 v3 processors are needed)  Notes:     Supported only, no preloaded models     For latest VMware compatibility list for ThinkServer, please see <a href="http://www.vmware.com/resources/compatibility/search.php">http://www.vmware.com/resources/compatibility/search.php</a> For latest Red Hat compatibility list for ThinkServer, please see <a href="https://htm.ntm.rmware.com/resources/compatibility/search.php">https://htm.ntm.rmm.rmm.rmm.rmm.rmm.rmm.rmm.rmm.rmm.r</a>

# ThinkServer TS440 Optional Configurations

Memory ThinkServer 2GB DDR3L-1600MHz (1RX8) ECC UDIMM ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM ThinkServer 8GB DDR3L-1600MHz (2RX8) ECC UDIMM	0C19498 0C19499
ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM	
THINKOOT VOT GGB BBT 100 TOOGTWINE (21 TXG) 200 GBTWINT	0C19500
Disk Drive	0010000
	0010501
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19501
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19502
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19503
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19504
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19505
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89473
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89474
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89475
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89477
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19520
ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2619
ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2621
ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive	0A89409
ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494
ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19495
Connectivity	
ThinkServer RAID 500 Adapter II	0A89464
ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407
ThinkServer RAID 700 Adapter II	0A89463
ThinkServer RAID 700 Battery	67Y2647
Connectivity	
ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
Parallel/Serial Port Adapter	
ThinkServer Single Parallel Port PCI Adapter	0C19508
ThinkServer Single Serial Port PCI Adapter	0C19509
ThinkServer Dual Serial Port PCI Adatper	0C19510
ThinkServer Dual Serial Port PCIe Adatper	0C19511
Graphics	
ThinkServer 512MB NVS 300 PCle x1 Graphic Adapter by NVIDIA	0C19528
3.5" Hard Drive Conversion Kit ThinkServer 3.5" HDD to 5.25" Tray Convertor Kit	0C19514
ThinkServer 3.5" HDD to 5.25" Tray Convertor with Slim ODD Kit	0C19529
Tower to Rack Shelf Conversion Kit	0010020
ThinkServer Tower to Rack Shelf Conversion Kit	0C19515
Redundant Power Supply	
ThinkServer 450W Gold Hot Swap Redundant Power Supply	67Y2625

For more information on server accessories, please visit: www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

# ThinkServer TD350 TopSeller Model(s) - 70DG (September 2014) - I

Type- model	Processor	Memory	RAID controller	Disk bays	Disk drives	Discrete ethernet	SD module	Optical	TPM	System mgmt	Power	Preloaded OS	Warranty (-year, on-site)
70DG0003UX	2xE5-2620 v3 6C/2.4GHz/15MB/85W/1866MHz	4x8GB 2133MHz RDIMM	110i+key	5x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3
70DG0007UX	1xE5-2603 v3 6C/1.6GHz/15MB/85W/1600MHz	1x8GB 2133MHz RDIMM	110i+key	5x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	550Wx1	No	3
70DG0008UX	1xE5-2609 v3 6C/1.9GHz/15MB/85W/1600MHz	1x8GB 2133MHz RDIMM	110i+key	5x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	550Wx1	No	3
70DG0009UX	1xE5-2620 v3 6C/2.4GHz/15MB/85W/1866MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3
70DG000AUX	1xE5-2640 v3 8C/2.6GHz/20MB/90W/1866MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3

70DG000AUX	1xE5-2640 8C/2.6GH	440 v3				Open			
Components	S	Specification							
Mechanical		Tower or 4U rack     Minimum configuration	n: 22 ka (48.5 lb).	maximum:	41.4 ka (9	91.27 lb)			
Dimensions (	(tower)	Height: 459 mm (18.1 i							
Dimensions (	(rack)	Height: 173 mm (6.8 in							
Chipset		ntel C612 Platform Controller Hub (PCH)							
Processor		Up to two Intel Xeon E 16 cores up to 2.3GHz 10 cores up to 2.6GHz 4 cores up to 3.5GHz. Up to 2133MHz memo	, 14 cores up to 2.2, , 8 cores up to 3.2 Two QPI link up to ry speed. Up to 40	3GHz, 12 c GHz, 6 core 9.6 GT/s. MB cache.	ores up to es up to 3	o 2.6GHz, 3.4GHz,			
Memory DIM	Ms	16 DIMM sockets (8 DIMMs per processor), 8-channel capable (4-chann processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2							
Memory capa	acity	256GB (RDIMM, 16GB	x 16)/512GB (LRI	DIMM, 32G	B x 16)				
Memory prot	ection	ECC, memory mirroring							
RAID suppor	t	RAID 0, 1, 10 with RAI RAID 0, 1, 10 with RAI RAID 0, 1, 10, 5, 50, 6, optional 1GB memory of RAID 0, 1, 10, 5, 50, 6, 1GB memory, CacheVa optional CacheCade Pro-	D 510i, 6Gb/s SA: 60 with RAID 720 or 1GB/2GB/4GB f 60 with LSI 92860 ault flash cache wit or or FastPath upg	S/ŚATA, op bi or 720ix, flash with si CV-8e, 6Gb th super ca rade key	tional key 12Gb/s S uper capa /s SAS/S	for RAID 5, 50. SAS/SATA, acitor			
Disk drive ba	ıys	3.5" bay up to 15, or 2.9 Or 5 3.5" easy swap ba	ys (non-hot swap)						
Optical drive		Two 5.25" bays for optical and tape drives. DVD-ROM or DVDRW							
Tape drive ba	ays	Up to one LTO-6 intern							
Network inter	rfaces	One dedicate manager Supports optional discr	nent port, two giga ete network adapt	ıbit etherne ers via PCI	t ports. e slots				
Ports		Front: Two USB 2.0.  Rear: One VGA, four USB 3.0, one RJ-45 (dedicate/share mgmt), two ethernet (RJ-45), one serial (9-pin)							
Cooling		4 (3+1), hot-swap							
Power supply	/	Up to two redundant ho power supplies. 550 W 750 W is 80 PLUS Plat 450 W is 80 PLUS Gold	and 1 <sup>'</sup> 100 W are 8 inum or Titanium q d qualified	0 PLUS Pla Jualified,	atinum qu	alified,			
Graphics		Onboard Aspeed AST2 Maximum resolution: 19		emory, one	VGA on i	rear.			
Hot-swap par	rts	Disk drives (hot-swap n							
Systems management	t	UEFI. Onboard Aspect IPMI 2.0-compliant bas Control Panel LEDs she Supports ThinkServer I ThinkServer Energy Maserver Partner Pack for tions Manager, ThinkServer Soptional ThinkServer S (graphics, keyboard an	eboard manageme ows the status of p Diagnostics, Think's anager, ThinkServe r VMware vCenter erver Power Planne system Manager (T	ent controllower, ID, no Server Deper System I and Microser.  SM) Premi	er (BMC). etwork, s loyment I Manager oft Syste	ystem. Manager, CLI, Lenovo Think- m Center Opera-			
Security feat	ures	Power-on and administ optional Trusted Platfor	rator password,	,	nt)				

Components	Specification
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2
Declared noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)
	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html

Slot 2

Supports up to 7 PCle 3.0 x16 slots:

Slot 7 Slot 1: PCle 3.0 x16; full height, full length, by CPU 1, double-wide
Slot 5 Slot 2: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 5 Slot 3: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 4 Slot 4: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2
Slot 5: PCle 3.0 x16; full height, full length, by CPU 2
Slot 6: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2
Slot 7: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2

#### **TD350 Environment Specification**

_1		
	Temperature - operating	50 °F to 113 °F (10 °C to 45 °C)
$\exists$	Temperature - storage (no package)	-10 °C to 60 °C
	Temperature - storage (with package)	-40 °C to 60 °C
	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)
1	Humidity - operating	20%~80%, non-condensing
1	Humidity - storage (with package)	8%~90%, non-condensing

Note: 45°C continuous operation only supports on 3.5" ES models with max 120W CPU/no tape/redundant PSU required/ No HBA or RAID cards, or 2.5" HS models with max 8 HDD/max 120W CPU/no tape/redundant PSU required/ No HBA or RAID cards.

#### Core Options for ThinkServer TD350 (partial)

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4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4) LRDIMM
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45737	ThinkServer 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0G45743	ThinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28696	ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade
4X20F28576	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867	ThinkServer System Manager Premium (TSM Premium)
4XF0G45870	ThinkServer TD350 4-Post Static Rack Kit

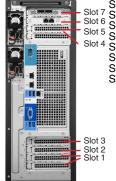
For a list of all supported options, please see: http://www.lenovoquickpick.com/usa/home/thinkserver/rack-and-tower-server

# ThinkServer TD350 TopSeller Model(s) - 70DG (September 2014) - II

Type- model	Processor	Memory	RAID controller	Disk bays	Disk drives	Discrete ethernet	SD module	Optical	TPM	System mgmt	Power	Preloaded OS	Warranty (-year, on-site)
70DG000BUX	1xE5-2650 v3 10C/2.3GHz/25MB/105W/2133MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3
70DG000CUX	1xE5-2670 v3 12C/2.3GHz/30MB/120W/2133MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3

Components	Specification
Mechanical	Tower or 4U rack
	• Minimum configuration: 22 kg (48.5 lb), maximum: 41.4 kg (91.27 lb)
Dimensions (tower)	Height: 459 mm (18.1 in), width: 251 mm (9.9 in), depth: 686 mm (27 in)
Dimensions (rack)	Height: 173 mm (6.8 in), width: 482 mm (19 in), depth: 686 mm (27 in)
Chipset	Intel C612 Platform Controller Hub (PCH)
Processor	Up to two Intel Xeon E5-2600 v3 family processors with 16 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.3GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 40MB cache.
Memory DIMMs	16 DIMM sockets (8 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16)
Memory protection	ECC, memory mirroring, lockstep, and memory sparing
RAID support	RAID 0, 1, 10 with RAID 110i, 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with RAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5, 50. RAID 0, 1, 10, 5, 50, 6, 60 with RAID 720i or 720ix, 12Gb/s SAS/SATA, optional 1GB memory or 1GB/2GB/4GB flash with super capacitor RAID 0, 1, 10, 5, 50, 6, 60 with LSI 9286CV-8e, 6Gb/s SAS/SATA, 1GB memory, CacheVault flash cache with super capacitor, optional CacheCade Pro or FastPath upgrade key
Disk drive bays	3.5" bay up to 15, or 2.5" bay up to 16, hot-swap. Or 5 3.5" easy swap bays (non-hot swap)
Optical drive	Two 5.25" bays for optical and tape drives. DVD-ROM or DVDRW
Tape drive bays	Up to one LTO-6 internal SAS tape drive
Network interfaces	One dedicate management port, two gigabit ethernet ports. Supports optional discrete network adapters via PCIe slots
Ports	Front: Two USB 2.0. Rear: One VGA, four USB 3.0, one RJ-45 (dedicate/share mgmt), two ethernet (RJ-45), one serial (9-pin)
Cooling	4 (3+1), hot-swap
Power supply	Up to two redundant hot-swap 450W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified
Graphics	Onboard Aspeed AST2400 with 16MB memory, one VGA on rear. Maximum resolution: 1920x1200@60Hz
Hot-swap parts	Disk drives (hot-swap models), power supplies, and fans
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer Diagnostics, ThinkServer Deployment Manager, ThinkServer Energy Manager, ThinkServer System Manager CLI, Lenovo ThinkServer Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, ThinkServer Power Planner. Optional ThinkServer System Manager (TSM) Premium for for remote presence (graphics, keyboard and mouse, and virtual media)
Security features	Power-on and administrator password, optional Trusted Platform Module (TCG 1.2-compliant)

Components	Specification						
Operating systems	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2						
Declared noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)						
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html						



Supports up to 7 PCle 3.0 x16 slots:

Slot 7 Slot 1: PCle 3.0 x16; full height, full length, by CPU 1, double-wide
Slot 5 Slot 2: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 5 Slot 3: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 4 Slot 4: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2
Slot 5: PCle 3.0 x16; full height, full length, by CPU 2
Slot 6: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2
Slot 7: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2

#### **TD350 Environment Specification**

Temperature - operating	50 °F to 113 °F (10 °C to 45 °C)
Temperature - storage (no package)	-10 °C to 60 °C
Temperature - storage (with package)	-40 °C to 60 °C
Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)
Humidity - operating	20%~80%, non-condensing
Humidity - storage (with package)	8%~90%, non-condensing

Note: 45°C continuous operation only supports on 3.5" ES models with max 120W CPU/no tape/redundant PSU required/ No HBA or RAID cards, or 2.5" HS models with max 8 HDD/max 120W CPU/no tape/redundant PSU required/ No HBA or RAID cards.

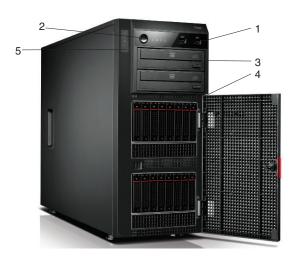
#### Core Options for ThinkServer TD350 (partial)

Core Options	ioi iiiikseivei ibsso (partiai)
4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4) LRDIMM
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45737	ThinkServer 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
	ThinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28696	ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade
4X20F28576	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867	ThinkServer System Manager Premium (TSM Premium)
4XF0G45870	ThinkServer TD350 4-Post Static Rack Kit

# ThinkServer TD350 Relationship Model(s)

Type- model Announced S	Processor deptember 2014	Memory	RAID controller	Disk bays	Disk drives	Discrete ethernet	SD module	Optical	ТРМ	System mgmt	Power	Preloaded OS	Warranty (-year, on-site)
	2xE5-2620 v3 6C/2.4GHz/15MB/85W/1866MHz	4x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	5x1TB 3.5" SATA HS +2x120GB M.2	Opt	Opt	DVDRW	TPM	TSM	750Wx2 Platinum	No	3
70DM0001UX	2xE5-2650 v3 10C/2.3GHz/25MB/105W/2133MHz	8x8GB 2133MHz RDIMM	720ix+2GB Flash	15x3.5"HS Rack	2x120GB SATA SSD HS +8x2TB 3.5" SATA HS +2x120GB M.2	GbEx4 RJ45	Opt	DVDRW	TPM	TSM	750Wx2 Platinum	No	3

# ThinkServer TD340 Overview



#### Front view

- 1. Front I/O: 2 USB 2.0
- Power Button 2.
- 3. Two 5.25" optical drive bays4. 16 x 2.5" hot-swap drive bays (on selected models, also supports one of the following: 4 x 3.5" direct cable bays, or 4 x 3.5" hot-swap bays, or 8 x 3.5" hot-swap bays, or 8 x 2.5" hot-swap bays,
- 5. Intelligent Diagnostics Module (optional)



#### Rear view

- Hot-swap power supplies, 800W, 80 PLUS Gold (on selected models, also supports one fixed power supply, 625W, 80 PLUS Bronze)
   Rear I/O: 4 USB 2.0
- - 1 Serial (9-pin) 2 RJ-45 (one for dedicate/share management)
  - 1 VGA
- 8. Expansion slots\*:
  - 1 PCle 3.0 x8 (near rear I/O, 2nd CPU is needed)

  - 1 PCle 3.0 x16 1 PCle 3.0 x8 (2nd CPU is needed) 1 PCle 3.0 x8 (2nd CPU is needed) 1 PCle 3.0 x8 (x4 elec)
  - 1 PCI
  - \* Add-on ethernet adapter, RAID adapter, and graphics adapter are optional

#### Internal

- Two LGA1356 sockets, supports up to two processors from Intel Xeon E5-2400 v2 and E5-2400 families 12 DIMM sockets, supports up to 192GB ECC LV RDIMM or 48GB ECC LV UDIMM memory Up to 16 x 2.5" hard drive bays

#### Mechanical

- Tower, business black color, metal case
- Rack-mountable to 5U
- W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
- 57.32 lb (26kg) max configuration

Type- model	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Optical	Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS	Power Supply	Warranty (-year, on-site)
70B7002GUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	No	No	No	No	ТРМ	No	1x800W Redundant	1
70B7002HUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	No	No	No	No	ТРМ	No	1x800W Redundant	1
70B7002JUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002MUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3
	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3

For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
 For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
 For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
 For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> <li>RoHS-compliant</li> </ul>						
	Up to <b>192GB</b> DDR3 LV RDIMM (16GB x 12), or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	Mechanical						
	ECC, memory mirroring, memory sparing  Supports one of the following, depending on models:  RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5  RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5  RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50  RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit  RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault	opt optical std optical	Tower, rack-mountable to 5U via optional conversion kit (Conversion kit is not included in model)  7.68" W x 23.4" D x 16.9" H (without foot)  195mm W x 595mm D x 430mm H (without foot)  57.3 lb (26kg) max configuration  Disk bay Configurations  Supports one of the following, depending on models:						
Ophoord naturals	flash cache with super capacitor/CacheCade Pro 2.0/FastPath key *RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only  Supports two half-height 5.25" optical bays, up to two optical drives  Two Gigabit Ethernet port via two Intel 82574L, either port can work as dedicate/share management (via BIOS setting)	Disk Bay area 1	4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)     4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)     8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)     8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)     16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)  Expansion Slots						
Discrete network (optional) Intelligent Diagnostics	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2 Supports optional Intelligent Diagnostics Module (IDM) on selected models,	Rear***	Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec) Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: half-length, full-height, PCIe 3.0 x8						
	IDM LED lights indicate failing component category     Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Front control panel LEDs shows the status of power, hard drive activity, network, system     ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8 5 - PCle x16	Slot 5: half-length, full-height, PCle 3.0 x16 Slot 6: half-length, full-height, PCle 3.0 x8 (near CPU)  ** Single processor models: Slot 1, 2, 5 are functional Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0 Rear ports: Four USB 2.0, one serial (9-pin),						
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector Internal USB: One internal USB port (Type A)						
	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models:	one 625W fixed power supply						

Type- model	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Optical	Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS	Power Supply	Warranty (-year, on-site)
	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002QUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002RUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3
70B700250X	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3
	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3
	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002VUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset Memory DIMMs		Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> <li>RoHS-compliant</li> </ul>					
Memory capacity	or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	Mechanical					
Memory protection  RAID support	ECC, memory mirroring, memory sparing  Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50 RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache,	opt optical	<ul> <li>Tower, rack-mountable to 5U via optional conversion kit (Conversion kit is not included in model)</li> <li>7.68" W x 23.4" D x 16.9" H (without foot)</li> <li>195mm W x 595mm D x 430mm H (without foot)</li> <li>57.3 lb (26kg) max configuration</li> </ul> Disk bay Configurations					
	optional intelligent Battery Backup Unit RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key *RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only	area 2	Supports one of the following, depending on models:  • 4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)  • 4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)  • 8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)					
Optical drive (optional)	Supports two half-height 5.25" optical bays, up to two optical drives	Disk Bay area 1	8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)     16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)					
Onboard network	Two Gigabit Ethernet port via two Intel 82574L, either port can work as dedicate/share management (via BIOS setting)		Expansion Slots					
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec)					
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category	PSUPSU	Slot 3: half-length, full-height, PCle 3.0 x8 Slot 4: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x16					
Systems management (TMM Premium is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Front control panel LEDs shows the status of power, hard drive activity, network, system     ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8 5 - PCle x16	Slot 6: half-length, full-height, PCle 3.0 x8 (near CPU)  ** Single processor models: Slot 1, 2, 5 are functional Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0 Rear ports: Four USB 2.0, one serial (9-pin),					
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	two ethernal USB: Internal USB: Four USB 2.0, one serial (9-pin), two ethernal (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector  Internal USB: One internal USB port (Type A)					
Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models:	one 625W fixed power supply					

Type- model	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Optical	Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS	Power Supply	Warranty (-year, on-site)
70B7002WUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002XUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70031UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID700	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70033UX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID700	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> <li>RoHS-compliant</li> </ul>
	Up to <b>192GB</b> DDR3 LV RDIMM (16GB x 12), or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	Mechanical
	ECC, memory mirroring, memory sparing  Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50 RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit	opt optical std optical	Tower, rack-mountable to 5U via optional conversion kit (Conversion kit is not included in model)  7.68" W x 23.4" D x 16.9" H (without foot)  195mm W x 595mm D x 430mm H (without foot)  57.3 lb (26kg) max configuration  Disk bay Configurations  Supports one of the following, depending on models:
	RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key *RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only  Supports two half-height 5.25" optical bays, up to two optical drives  Two Gigabit Ethernet port via two Intel 82574L,	area 2´ Disk Bay area 1	<ul> <li>4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)</li> <li>4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)</li> <li>8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)</li> <li>8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)</li> <li>16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)</li> </ul>
Discrete network (optional)	either port can work as dedicate/share management (via BIOS setting) Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	Expansion Slots  Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec) Slot 3: half-length, full-height, PCIe 3.0 x8
Module (optional) Systems management (TMM Premium is	Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category  Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions  Front control panel LEDs shows the status of power, hard drive activity,		Slot 4: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x16 Slot 6: half-length, full-height, PCle 3.0 x8 (near CPU)  "Single processor models: Slot 1, 2, 5 are functional Dual processor models: All six slot are functional  Ports
Power cupply	network, system  ThinkServer EasyStartup/EasyManage/EasyUpdate  Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	6 - PCle x8 5 - PCle x16 4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	Front ports: Rear ports: Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector Internal USB: One internal USB port (Type A)
	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models:	one 625W fixed power supply

Type- model	Intel Xeon Processor	2nd CPU		Disk Bays	RAID controller	Storage	Optical	Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS	Power Supply	Warranty (-year, on-site)
70B70034UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID700	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70035UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID710	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70036UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID710	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Environmental	Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU
Memory DIMMs	Twelve Dilvilvi sockets, six Dilvilvi sockets per processor	certifications	Energy Star Server 1.1 qualified for models with 625 watts fixed PSU  Paul Second PSU  PSU  PSU  PSU  PSU  PSU  PSU  PSU
Memory capacity	Up to <b>192GB</b> DDR3 LV RDIMM (16GB x 12), or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	RoHS-compliant     Mechanical
Memory protection	ECC, memory mirroring, memory sparing		Tower, rack-mountable to 5U via optional conversion kit
RAID support	Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50 RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key **RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only	opt optical std optical  Disk Bay area 2	(Conversion kit is not included in model)  7.68" W x 23.4" D x 16.9" H (without foot)  195mm W x 595mm D x 430mm H (without foot)  57.3 lb (26kg) max configuration  Disk bay Configurations  Supports one of the following, depending on models:  4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)  4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)  8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)
Optical drive (optional)	Supports two half-height 5.25" optical bays, up to two optical drives	Disk Bay	8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)
Onboard network	Two Gigabit Ethernet port via two Intel 82574L, either port can work as dedicate/share management (via BIOS setting)	area 1	• 16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)  Expansion Slots
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec)
Intelligent Diagnostics Module (optional)	IDM LED lights indicate failing component category	PSUPSU	Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: half-length, full-height, PCIe 3.0 x8 Slot 5: half-length, full-height, PCIe 3.0 x16
Systems management (TMM Premium is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Front control panel LEDs shows the status of power, hard drive activity, network, system     ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8 5 - PCle x16	Slot 6: half-length, full-height, PCle 3.0 x8 (near CPU)  ** Single processor models: Slot 1, 2, 5 are functional  Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0  Rear ports: Four USB 2.0, one serial (9-pin),
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector  Internal USB: One internal USB port (Type A)
Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models:	one 625W fixed power supply

# ThinkServer TD340 Relationship Model

# List of ThinkServer TD340 Relationship models

Type-		2nd		Disk	RAID			Discrete		ThinkServer Management Module				Preloaded	Power	Warranty (-year,
model	Intel Xeon Processor	CPU	Memory	Bays	controller	Storage	Optical	ethernet	(IDM)	Premium (Premium)	kit	Graphics	TPM	os	Supply	on-site)
Model(s) anno	ounced January 21, 2014															
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx4 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID500 +Upgrade	4x2TB 3.5" SATA	DVD±RW	350T2	IDM	TMM Premium	No	No	TPM	No	2x800W Redundant	3
70B60003UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID700	8x2TB 3.5" SAS	DVD±RW	350T2	IDM	TMM Premium	No	No	ТРМ	No	2x800W Redundant	3
70B60004UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	8GBx12 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID710 +CacheVault	8x300GB 2.5" SAS	DVD±RW	350T4	IDM	TMM Premium	No	No	ТРМ	No	2x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

# ThinkServer TD340 Platform Systems Specifications - I of II

Components	Specifications											
Mechanical	<ul> <li>Tower, rack-mou</li> <li>7.68" W x 23.4"</li> <li>195mm W x 595</li> </ul>	D x 16.9" 5mm D x 4	H (withoʻu I30mm H	t foot)								
Chinaat	<ul> <li>57.3 lb (26kg) m</li> <li>Intel C606 Chips</li> </ul>		uration									
Chipset	Two LGA1356 so		norts un t	n two proc	essors fro	m Intel 3	(eon F5-2	400 v2 or )	(eon F5-2400	) families		
	the following proc				000010 110			-100 VE 01 7	(CON 20 2400	, idiriiiico,		
	01			<u> </u>	Processor	s Specifi	cations*					
	Processor Numb	er # of	# of	Clock	Max Turbo	opcom	QPI		Memory	Part Number		
	Processor Number # of Clock Max Turbo Cache QPI Speed Max TDP Speed											
	Intel Xeon E5-2400 v2 Series											
	Xeon E5-2470 v2	2 10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19561		
	Xeon E5-2450L v	/2 10		1.7 GHz	2.1 GHz		7.2 GT/s	60W	DDR3-1600	0C19568		
	Xeon E5-2450 v2				3.3 GHz	20MB	8 GT/s	95W	DDR3-1600			
	Xeon E5-2440 v2			1.9 GHz	2.4 GHz		7.2 GT/s	95W	DDR3-1600	0C19563		
Processors	Xeon E5-2430L v	/2 6	12	2.4 GHz	2.8 GHz		7.2 GT/s	60W	DDR3-1600	0C19569		
	Xeon E5-2430 v2			2.5 GHz	3 GHz		7.2 GT/s	80W	DDR3-1600			
	Xeon E5-2420 v2			2.2 GHz	2.7 GHz		7.2 GT/s	80W	DDR3-1600			
	Xeon E5-2407 v2			2.4 GHz	2.4 GHz		6.4 GT/s	80W	DDR3-1333			
	Xeon E5-2403 v2	2 4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333			
	Intel Xeon E5-24											
	Xeon E5-2420	6		1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89456		
	Notes: All processors specifications is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see <a href="http://ark.intel.com/">http://ark.intel.com/</a> 1600MHz, LV UDIMM or LV RDIMM, DDR3, 3-channel per processor, 240-pin											
Memory type						er proces	ssor, 240-p	in				
Memory DIMMs	Twelve DIMM soc					D DDD	IVI IDIMI	M /4CD v 1	0)			
Memory capacity  Memory protection	ECC, memory mi				up to 48G	B DDR3	LV UDIIVII	VI (4GB X I	2)			
viernory protection	Actual memory opera	atina speed a	epends on pr	ocessor men	norv controller	speed, ins	talled memory	speed, and d	uantity of memory	/ DIMMs		
Additional memory		Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs  Maximum memory operating speed are 1333MT/s on LV UDIMM models										
lisclaimers	Over six DIMMs requ											
	Supports one of the following disk bay configurations:  4 x 3.5" non-hot swap disk bays, supports SATA non-hot swap hard drives  4 x 3.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives  8 x 3.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives  8 x 2.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives  16 x 2.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives											
Disk bays configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap	Disk bays Disk bays Disk bays	s, supports s, supports s, supports s, suppor	S SATA/SA S SATA/SA S SATA/SA	S hot-swa S hot-swa S hot-swa AS hot-sw	p hard c p hard c p hard c	lrives or St Irives or St Irives or St	SD drives SD drives				
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter	Disk bays Disk bays Disk bays	s, supports s, supports s, supports vs, suppor	S SATA/SA S SATA/SA S SATA/SA ts SATA/S	AS hot-swa AS hot-swa AS hot-swa AS hot-swa Transfer rates	p hard c p hard c p hard c ap hard (	Irives or SS Irives or SS Irives or SS drives or S Optional up	SD drives SD drives SSD drives ogrades				
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard)	Disk bays Disk bays Disk bays p Disk bay	s, supports s, supports s, supports s, suppor	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	AS hot-swa AS hot-swa AS hot-swa AS hot-swa Transfer rates 6Gb/s	p hard of p hard optional add RA	Irives or SS Irives or SS Irives or SS drives or S Optional up upgrade k ID 5 suppo	SD drives SD drives SSD drives ogrades sey, ort				
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard)	Disk bays Disk bays Disk bays p Disk bay Disk type	s, supports s, supports s, supports ys, support RAID suppor	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s	p hard op hard op hard optional add RA optional add RA	Irives or Strives or S	SD drives SD drives SSD drives ogrades sey, ort sey, ort				
configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard)	Disk bays Disk bays Disk bays Disk bays Disk type SATA	RAID support 0, 1, 10 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0, 1, 10 0 0 0, 1, 10 0 0 0, 1, 10 0 0 0, 1, 10 0 0 0	S SATA/SA S SATA/SA S SATA/SA S SATA/SA ts SATA/S (* Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s	p hard op hard op hard op hard optional add RA optional add RA optional opt	Irives or SSIrives	SD drives SD drives SSD drives ogrades cey, ort cey, ort				
configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i)	Disk bays Disk bays Disk bays p Disk bay Disk type SATA	s, supports, sup	S SATA/SA S SATA/SA S SATA/SA Its SATA/SA Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s 6Gb/s	p hard op hard op hard of ap hard of optional add RA optional add RA optional add RA optional optional optional optional optional optional optional optional optional	Irives or Strives or S	SD drives SD drives SSD drives ogrades eey, ort eey, ort eey, opport Battery				
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i) RAID 700 (LSI 9260-8i)	Disk bays Disk bays Disk bays p Disk bays p Disk type SATA SATA/SAS	s, supports, supports, supports, supports, supports, supports, supports, s, supports, supports, s, supports, s, supports, s, supports, supports	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s 6Gb/s	p hard cp hard cp hard cap hard cop hard cap hard coptional add RA optional sadd RA optional coptional coptional coptional coptional coption	Irives or Strives or S	SD drives SD drives SD drives SSD drives ogrades eey, ort eey, ort eey, opport Battery 108) ault (CV) adde Pro 2.0				
configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i) RAID 700 (LSI 9260-8i)	Disk bays Disk bays Disk bays p Disk bays p Disk type SATA SATA/SAS SATA/SAS	s, supports, supports, supports, supports, supports, supports, supports, sys, sys, sys, sys, sys, sys, sys, s	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	S hot-swa S hot-swa S hot-swa AS hot-swa AS hot-swa Transfer rates 6Gb/s 6Gb/s 6Gb/s 6Gb/s	p hard op hard op hard op hard op hard op hard optional add RA optional add RA optional Backup  optional Backup  optional Backup  optional Backup  optional Backup	Irives or Strives or S	SD drives SD drives SD drives SSD drives ogrades eey, ort eey, ort eey, opport Battery 108) ault (CV) adde Pro 2.0				
onfigurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i) RAID 700 (LSI 9260-8i) RAID 710 (LSI 9270CV-8i)	Disk bays Disk bays Disk bays p Disk bays p Disk type SATA SATA/SAS SATA/SAS SATA/SAS	s, supports, supports, supports, supports, supports, supports, supports, see supports, see supports, see supports, see supports, see supports, supports, supports, see sup	S SATA/SA S SATA/SA S SATA/SA TO	AMD1000 suppp	p hard cp hard cp hard cap har	Irives or Strives or S	SD drives SD drives SD drives SSD drives ogrades eey, ort eey, ort eey, opport Battery 108) ault (CV) adde Pro 2.0				

# ThinkServer TD340 Platform Systems Specifications - II of II

Components	Specifications								
Front ports	Two USB 2.0								
Rear ports	Four USB 2.0, one seri	al (9-pin), two ethernet (RJ-45, o	ne for dedicate/share mgmt), one a	analog VGA DB-15 connector					
Internal USB	One internal USB port								
Expansion Slots	Slot 1: half-length, full-l Slot 2: half-length, full-l Slot 3: half-length, full-l Slot 4: half-length, full-l Slot 5: half-length, full-l	Up to six PCI-Express slots (only slot 1, 2, 5 are functional for single processor models): Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec) Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: half-length, full-height, PCIe 3.0 x8 Slot 5: half-length, full-height, PCIe 3.0 x16 Slot 6: half-length, full-height, PCIe 3.0 x8 (near CPU)							
Graphics	Onboard Aspeed AST2	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear ( <i>Maximum resolution: 1600x1200@60Hz</i> ). Discrete NVIDIA NVS 300 graphics adapter is available on selected models							
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category								
Systems management (TMM Premium is optional)	<ul> <li>Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions</li> <li>Front control panel LEDs shows the status of power, hard drive activity, network, system</li> <li>ThinkServer EasyStartup/EasyManage/EasyUpdate</li> </ul>								
Security features (TPM is optional)		Power-on password/administrator password/ Trusted Platform Module (TCG 1.2-compliant, optional)							
Power supply	<ul> <li>One fixed 625 watts,</li> <li>Up to two redundant 8</li> </ul>	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies							
	Environmental certifications  • Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU • Energy Star Server 1.1 qualified for models with 625 watts fixed PSU • RoHS-compliant								
	EMC	FCC Class A, CSA, CE							
	240VA	Supports							
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)							
	Temperature - non operating (no package)	non operating -10 °C to 60 °C							
	Temperature - non operating (with package)	-40 °C to 60 °C							
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)							
	Humidity - operating	10%~80%, non-condensing							
Safety, environment, and certifications	Humidity - non operating (no package)	8%~90%, non-condensing							
	Humidity - non operating (with package)	8%~90%, non-condensing							
			System	Configuration					
		Category	Entry level	High-end					
		CPU	1 x CPU	2 x CPU					
		Optical Drive	1 DVD-ROM	1 DVD-ROM					
		Drive Bays	4 x 3.5" direct cable	8 x 3.5" hot-swap					
	Acoustic noise	HDD	2 x 500GB 3.5" SATA	8 x 2TB 3.5" SAS					
	(idle/working mode)	Memory	2GB x 1 (LV UDIMM)	8GB x 12 (LV RDIMM)					
	(	PSU	1 x 625 watts fixed	1 x 800 watts hot-swap					
		RAID	RAID 1	RAID 5					
		Expansion Adapters	No	1 x RAID 700 2 x Ethernet Adapters					
		Sound Pressure (operating)	37.0 dB(A)	42.0 dB(A)					
		Sound Pressure (idle)	35.0 dB(A)	38.0 dB(A)					

# **ThinkServer TD340 Optional Configurations**

Partial list of accessories supported on ThinkServer TD340
ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: bplocator.lenovo.com

Option Number	Option Description
Option Number	Processors
0A89456	Intel Xeon E5-2420 Processor Option for ThinkServer TD340
0C19561	Intel Xeon E5-2470 v2 Processor Option for ThinkServer TD340
0C19562	Intel Xeon E5-2450 v2 Processor Option for ThinkServer TD340
0C19563	Intel Xeon E5-2440 v2 Processor Option for ThinkServer TD340
0C19564	Intel Xeon E5-2430 v2 Processor Option for ThinkServer TD340
0C19565	Intel Xeon E5-2420 v2 Processor Option for ThinkServer TD340
0C19566	Intel Xeon E5-2407 v2 Processor Option for ThinkServer TD340
0C19567	Intel Xeon E5-2403 v2 Processor Option for ThinkServer TD340
0C19568	Intel Xeon E5-2450L v2 Processor Option for ThinkServer TD340
0C19569	Intel Xeon E5-2430L v2 Processor Option for ThinkServer TD340
	Memory
0C19499	ThinkServer 4GB DDR3L-1600MHz (1Rx8) ECC UDIMM
0C19500	ThinkServer 8GB DDR3L-1600MHz (2Rx8) ECC UDIMM
0C19533	ThinkServer 4GB DDR3L-1600MHz (1Rx8) RDIMM
0C19534	ThinkServer 8GB DDR3L-1600MHz (2Rx8) RDIMM
0C19535	ThinkServer 16GB DDR3L-1600MHz (2Rx4) RDIMM
00.000	Drives - 3.5"
	3.5" Cabled SATA Hard Drives
0C19501	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19502	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19503	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19504	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19505	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive
	3.5" Hot Swap SATA Hard Drives
0A89473	ThinkServer 500GB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0A89474	ThinkServer 1TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0A89475	ThinkServer 2TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0A89477	ThinkServer 3TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0C19520	ThinkServer 4TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	3.5" Hot Swap 7.2K SAS Hard Drives
0C19530	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive
0C19531	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive
0C19532	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive
	3.5" Hot Swap 15K SAS Hard Drives
67Y2616	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive
4XB0F28644	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive
	3.5" Hot Swap SATA Solid State Drives
0C19571	ThinkServer 2.5" 100GB MLC SATA Solid State Drive with 3.5" Kit
0C19572	ThinkServer 2.5" 200GB MLC SATA Solid State Drive with 3.5" Kit
0C19573	ThinkServer 2.5" 400GB MLC SATA Solid State Drive with 3.5" Kit
	Drives - 2.5"
	2.5" Hot Swap SATA Hard Drives
0C19495	ThinkServer 500GB 7.2K 2.5" Enterprise SATA 6Gbps Hot Swap Hard Drive
0C19496	ThinkServer 1TB 7.2K 2.5" Enterprise SATA 6Gbps Hot Swap Hard Drive
	2.5" Hot Swap 10K SAS Hard Drives
67Y2619	ThinkServer 300GB 2.5" 10K SAS 6Gbps Hot Swap Hard Drive
67Y2621	ThinkServer 600GB 2.5" 10K SAS 6Gbps Hot Swap Hard Drive
0A89409	ThinkServer 900GB 2.5" 10K SAS 6Gbps Hot Swap Hard Drive
3, 100 100	2.5" Hot Swap SATA Solid State Drives
0A89418	ThinkServer 2.5" 200GB MLC SATA Solid State Drive (HS)
0A89419	ThinkServer 2.5" 400GB MLC SATA Solid State Drive (HS)
0A89420	ThinkServer 2.5" 100GB MLC SATA Solid State Drive (HS)
37 100 TEO	Thinksolver Lie 1900B MEO ONITY Cold Glate Blive (110)

Option Number	Option Description
Option Hambon	RAID
0A89422	ThinkServer RAID 300 Upgrade Key for Advanced RAID
0A89464	ThinkServer RAID 500 Adapter II
0A89407	ThinkServer RAID 500 Upgrade Key for Advanced RAID
0A89463	ThinkServer RAID 700 Adapter II
67Y2647	ThinkServer RAID 700 Battery
0C19489	ThinkServer RAID 710 Adapter
0C19490	ThinkServer RAID CacheVault Data Protection for RAID 710
0C19491	ThinkServer RAID FastPath Feature Upgrade Key for RAID 710
0C19492	ThinkServer RAID CacheCade Pro 2.0 Feature Upgrade Key for RAID 710
	Ethernet
0C19506	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter
0C19507	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter
0C19486	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter (SPF+)
0C19487	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter (Fibre)
0C19497	Lenovo 10Gbps Ethernet X540-T2 Server Adapter
0C19488	Lenovo 10Gbps Ethernet Fiber Module
	HBA
0C19476	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex
0C19478	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex
0C19483	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic
0C19482	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by QLogic
4700224004	Redundant Power Supply  Thirtie Course 2000M Cold Hat Supply Body and the Review Supply for Toward.
4X20E54691	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Tower
0010515	Other ThinkServer Tower to Rack Shelf Conversion Kit
0C19515 67Y2624	
	ThinkServer Management Controller Premium Upgrade Lenovo Preferred Pro Keyboard USB - US English 103P
06P4069	Lenovo Optical Mouse
0074009	Microsoft Windows Server ROK
4XI0E51561	Windows Server 2012 R2 Standard ROK (2 CPU/2VMs)
	Windows Server 2012 R2 Datacenter ROK (2 CPU)
	Windows Server 2012 R2 Essentials ROK (1-2 CPU)
82972SM	Windows Server 2012 Standard ROK (2 CPU/2VMs)
	Windows Server 2012 Datacenter ROK (2 CPU)
	Windows Server 2012 Essentials ROK (1-2 CPU)
	nation on server accessories, please visit:
	om/support/accessories
	pm/support/thinkserveraccessories
	om/support/security
Other accessori	es at www.lenovo.com/accessories
Accessories Gui	de pdf at www.lenovo.com/accessoriesguide

# ThinkServer TD340 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer TD340

List of operating system and virtualization software supported on fining	COCITOI I DO	1		T
Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows Server 2008 2	x86 Edition	,		
Windows Server 2008 Standard Edition (x86)			•	
Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (x86)			•	
Windows Server 2008	x64 Edition			
Windows Server 2008 Standard Edition (x64) (Include Hyper-v)	•		•	
Windows Server 2008 Enterprise Edition (x64) (Include Hyper-v)	•		•	
Windows Server 2008 Datacenter Edition (x64) (Include Hyper-v)	•		•	
Windows Server 2008 R2	(x64) with SF	P1		
Windows Server 2008 Standard Edition R2 with SP1(Include Hyper-v)	•		•	
Windows Server 2008 Enterprise Edition R2 with SP1(Include Hyper-v)	•	•	•	
Windows Server 2008 Datacenter Edition R2 with SP1(Include Hyper-v)	•	•	•	
Windows Server 2000 Battacenter Edition 112 With Or 1 (Include 11) per 17			-	
Windows Small Business Server 2011 Essentials	561761 2011		•	
Windows Small Business Server 2011 Standard	•	•	•	
	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V) Windows Server		•	•	
	<u>2012</u>	•	•	
Windows Server 2012 Standard (Include Hyper-v)	•	•	•	-
Windows Server 2012 Datacenter (Include Hyper-v)	•			•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 20		I		
Windows Server 2012 R2 Standard (Include Hyper-v)	•	•	•	•
Windows Server 2012 R2 Datacenter (Include Hyper-v)	•	•	•	•
Windows Server 2012 R2 Essentials	•	•	•	•
Windows Server 2012 R2 Hyper-V	•		•	
SUSE Linux Enterprise	Server x86			
SUSE Linux Enterprise Server 10 sp4 (32 bit)			•	
SUSE Linux Enterprise Server 11 sp2 (32 bit)	•		•	
SUSE Linux Enterprise	Server x64			
SUSE Linux Enterprise Server 10 sp4 (64 bit)			•	
SUSE Linux Enterprise Server 11 sp2 (64 bit)	•		•	
RedHat Enterprise Linux Se	rver (RHEL)	x86		
RedHat RHEL 5.9 (32 bit)	•		•	
RedHat RHEL 5.10 (32 bit)	•		•	
RedHat RHEL 6.4 (32 bit)	•		•	
RedHat RHEL 6.5 (32 bit)	•		•	
RedHat Enterprise Linux	Server x64			
RedHat RHEL 5.9 (64 bit)	•		•	
RedHat RHEL 5.10 (64 bit)	•		•	1
RedHat RHEL 6.4 (64 bit)	•		•	+
RedHat RHEL 6.5 (64 bit)	-		•	-
VMware x64			-	
Vmware ESXi 5.1 U1				_
				<u> </u>
Vmware ESXi 5.5	•		•	
Citrix Company 0.4		I		
Citrix XenServer 6.1	•		•	-
Citrix XenServer 6.02	•		•	1

#### Note

- For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html
- For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer\_OS\_&\_Virtualization\_Options\_Datasheet.pdf

# ThinkServer TD340 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer TD340 models with 3-year onsite base warranty For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Upgrade Service Description	Part Number
Warranty	1 4111111111111111111111111111111111111
3-year Onsite 24x7x4 Hour Response	5WS0F46876
3-year Onsite 24x7x8 Hour Response	5WS0F46919
3-year Onsite 9x5x4 Hour Response	5WS0F46920
4-year Onsite 24x7x4 Hour Response	5WS0F46867
4-year Onsite 24x7x8 Hour Response	5WS0F46846
4-year Onsite 9x5x4 Hour Response	5WS0F46907
4-year Onsite NBD	5WS0F46930
5-year Onsite 24x7x4 Hour Response	5WS0F46937
5-year Onsite 24x7x8 Hour Response	5WS0F46861
5-year Onsite 9x5x4 Hour Response	5WS0F46903
5-year Onsite NBD	5WS0F46922
Keep Your Drive (KYD) Service	
3-year KYD	5WS0F46823
3-year Onsite 24x7x4 Hour Response + KYD	5WS0F46821
3-year Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0F46868
3-year Onsite 24x7x8 Hour Response + KYD	5WS0F46819
3-year Onsite 9x5x4 Hour Response + KYD	5WS0F46873
4-year Onsite 24x7x4 Hour Response + KYD	5WS0F46941
4-year Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0F46850
4-year Onsite 24x7x8 Hour Response + KYD	5WS0F46946
4-year Onsite 9x5x4 Hour Response + KYD	5WS0F46858
4-year Onsite NBD + KYD	5WS0F46869
5-year Onsite 24x7x4 Hour Response + KYD	5WS0F46866
5-year Onsite 24x7x8 Hour Response + KYD	5WS0F46934
5-year Onsite 9x5x4 Hour Response + KYD	5WS0F46852
5-year Onsite NBD + KYD	5WS0F46865
Priority Technical Support	01100110000
3-year KYD + Priority Support	5WS0F46940
3-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46900
3-year Onsite 24x7x8 Hour Response + KYD + Priority Support	5WS0F46862
3-year Onsite 24x7x8 Hour Response + Priority Support	5WS0F46889
3-year Onsite 24x7x8 Hour Support + Priority Support	5WS0F46897
3-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46915
3-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46935
3-year Priority Support	5WS0E76471
4-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46886
4-year Onsite 24x7x8 Hour Response + KYD + Priority Support	5WS0F46854
4-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46887
4-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46921
4-year Onsite NBD + KYD + Priority Support	5WS0F46884
4-year Onsite NBD + Priority Support	5WS0F46931
5-year Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0F46928
5-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46933
5-year Onsite 24x7x8 Hour Response + KYD + Priority Support	5WS0F46847
5-year Onsite 24x7x8 Hour Response + Priority Support	5WS0F46881
5-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46878
5-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46917
5-year Onsite NBD + KYD + Priority Support	5WS0F46926
5-year Onsite NBD + Priority Support	5WS0F46853
5-year Priority Support	5WS0E77173
5-year Onsite NBD + KYD + Priority Support	5PS0F15388
5-year Onsite NBD + Priority Support	5WS0F15463
5-year Priority Support	5WS0E77173
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Upgrade Service Description	Part Number
Post Warranty	
1-year Onsite 24x7x4 Hour Response	5WS0F46814
1-year Onsite 24x7x4 Hour Response + KYD	5WS0F46817
1-year Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0F46828
1-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46831
1-year Onsite 24x7x8 Hour Response	5WS0F46822
1-year Onsite 24x7x8 Hour Response + KYD	5WS0F46825
1-year Onsite 24x7x8 Hour Response + KYD	5WS0F46838
1-year Onsite 24x7x8 Hour Response + Priority Support	5WS0F46842
1-year Onsite 9x5x4 Hour Response	5WS0F46833
1-year Onsite 9x5x4 Hour Response + KYD	5WS0F46834
1-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46848
1-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46849
1-year Onsite NBD	5WS0F46856
1-year Onsite NBD + KYD	5WS0F46845
1-year Onsite NBD + KYD + Priority Support	5WS0F46893
TopSeller Priority (TopSeller models only)	
3-year Onsite 24x7x4 Hour Response	5WS0F46918
3-year Onsite 9x5x4 Hour Response	5WS0F46924
4-year Onsite NBD	5WS0F46929
3-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46870
3-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46879
3-year Priority Support	5WS0E76457
4-year Priority Support	5WS0E76482

#### Note:

#### 24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

#### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

## 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

## **Priority Technical Support**

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

#### Keep Your Drive (KYD) Service

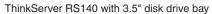
Retain drive (hard drive or SSD) and confidential data if the drive must be replaced. To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

ThinkServer RS140 Product Specifications Reference (PSREF)











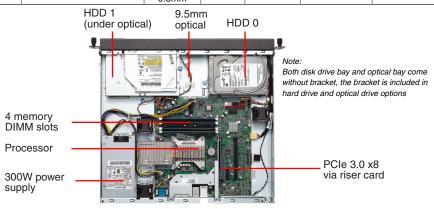
ThinkServer RS140 with 2.5" disk drive bay

# ThinkServer RS140 with 3.5" Disk Bay TopSeller Models - 70F9 (June 2014)

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Core i3-4130 2C/3.4GHz/3MB/1600MHz/Intel HD 4400	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Core i3-4130 2C/3.4GHz/3MB/1600MHz/Intel HD 4400	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
1/NEGOODBLIX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1

4U/3.2UF/2	Z/OIVID/1000IVITZ/III(EI HD F4000 1000IVII IZ ECC
Components	Specification
Mechanical	<ul> <li>1U rack with rail kit (2-post or 4-post, depending on models)</li> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> <li>7.36 kg (16.2 lb) when fully configured</li> </ul>
Chipset	Intel C226 Chipset, one LGA1150 socket for processor
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	Supports one of the following, depending on models:  • One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz)  • One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz)  • One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)
Memory DIMMs	Four DDR3 DIMM slots, 2-channel (integrated memory controller in processor)
Memory type/capacity	, , ,
RAID support	RAID 0, 1 with RAID 100, RAID 500, and RAID 700. Optional intelligent Battery Backup Unit (iBBU08) is available for the RAID 700. RAID 100 supports SATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA 6.0Gb/s and SAS 6.0 Gb/s
Optical drive	Supports one 9.5mm optical drive on selected model
Disk drive bays	Up to two 3.5" hard drives, non-hot swap (see right)
Onboard network interfaces	Two Gigabit Ethernet ports by Intel I210 on riser card; one Gigabit Ethernet port by Intel I217, dedicate/share management
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8
Front ports	Two USB 2.0
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort
Power supply	One fixed 300 watts power supply, 80-Plus Gold certified, non-hot swap
Systems management	<ul> <li>Intel Active Management Technology 9.1 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3/12x6 v3 processors)</li> <li>ThinkServer EasyStartup/EasyUpdate</li> </ul>
Security features	Power-on password, administrator password, and TPM (TCG 1.2-compliant)
Graphics	Integrated Intel HD Graphcis in processor
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi)
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x 1)
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html
Temperature - operatin	50 ° F to 95 ° F (10 ° C to 35 ° C)

<u> nπp://www.ienovo.com</u>	n/services_warranty/us/en/ienovo-warranty.ntmi
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)
Temperature - non operating (no package)	-10 °C to 60 °C
Temperature - non operating (with package)	-40 °C to 70 °C
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)
Humidity - operating	10%~80%, non-condensing
Humidity - non operating (no package)	10%~90%, non-condensing
Humidity - non operating (with package)	10%~90%, non-condensing



Core Options	for ThinkServer RS140 with 3.5" disk bay (partial)
Option	Description
4XB0F28664	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28666	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28667	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28668	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28669	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XB0F28670	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XB0F28671	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XF0F28767	ThinkServer 2-Post Rail kit for RS-Series
4XF0F28772	ThinkServer 4-Post Rail kit for RS-Series
0C19498	2GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19499	4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19500	8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0A89464	ThinkServer RAID 500 Adapter
0A89463	ThinkServer RAID 700 Adapter
67Y2647	ThinkServer RAID 700 Battery
4XB0F28645	ThinkServer 9280-8e 6G HBA
0C19506	Ethernet Server Adapter Card Dual Port - I350-T2
0C19507	Ethernet Server Adapter Card Quad Port - I350-T4
0C19511	PCI-E to 2 Serial port card

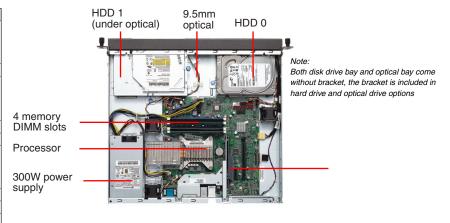
# ThinkServer RS140 with 3.5" Disk Bay TopSeller Models - 70F9 (June 2014) - II

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500	RAID 1	2 x 500GB 3.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 500	RAID 1	2 x 500GB 3.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500	RAID 1	2 x 500GB 3.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Essentials	1

Components	Specification					
Mechanical	<ul> <li>1U rack with rail kit (</li> <li>16.9" W x 16.2" D x</li> <li>430mm W x 411mm</li> </ul>	<ul> <li>1U rack with rail kit (2-post or 4-post, depending on models)</li> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> <li>7.36 kg (16.2 lb) when fully configured</li> </ul>				
Chipset	Intel C226 Chipset, on	e LGA1150 socket for processor				
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	<ul><li>One quad-core Xeor</li><li>One quad-core Xeor</li><li>One dual-core Core</li></ul>	Supports one of the following, depending on models: One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz) One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz) One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)				
Memory DIMMs		s, 2-channel (integrated memory controller in processor)				
Memory type/capacity	1600MHz DDR3, UDIMM, ECC; 32GB max					
RAID support	RAID 0, 1 with RAID 100, RAID 500, and RAID 700.  Optional intelligent Battery Backup Unit (iBBU08) is available for the RAID 700.  RAID 100 supports SATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA 6.0Gb/s and SAS 6.0 Gb/s					
Optical drive	Supports one 9.5mm optical drive on selected model					
Disk drive bays	Up to two 3.5" hard drives, non-hot swap (see right)					
Onboard network interfaces	Two Gigabit Ethernet ports by Intel I210 on riser card; one Gigabit Ethernet port by Intel I217, dedicate/share management					
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8					
Front ports	Two USB 2.0					
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort					
Power supply		ower supply, 80-Plus Gold certified, non-hot swap				
Systems management	Intel Active Management Technology 9.1 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3/12x6 v3 processors)     ThinkServer EasyStartup/EasyUpdate					
Security features	Power-on password, a	dministrator password, and TPM (TCG 1.2-compliant)				
Graphics	Integrated Intel HD Gr	aphcis in processor				
Operating systems supported	Windows Small Busine SUSE Linux Enterprise	rver 2012 R2, 2012, and 2008 R2, ess Server 2011, Red Hat Enterprise Linux 6.5, e Server 11, VMware vSphere 5.5 (ESXi)				
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x 1)					
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html					
Temperature - operatin		50 °F to 95 °F (10 °C to 35 °C)				
Temperature - non ope		-10 °C to 60 °C				
Temperature - non ope		-40 °C to 70 °C				
Altitude - operating	3 (   2	Supported Altitude (unpressurized): 0-10000ft (0-3048m)				
Humidity - operating		10%~80%, non-condensing				
Humidity - non operatir	ng (no package)	10%~90%, non-condensing				
Humidity non operation		10% 00% non-condensing				

10%~90%, non-condensing

Humidity - non operating (with package)



# ro Ontions for ThinkSorver DC140 with 2 F" disk boy (portiol)

Core Options	i for ThinkServer RS140 with 3.5" disk bay (partial)
Option	Description
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28665	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28666	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28667	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XB0F28671	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XF0F28767	ThinkServer 2-Post Rail kit for RS-Series
4XF0F28772	ThinkServer 4-Post Rail kit for RS-Series
0C19498	2GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19499	4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19500	8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0A89464	ThinkServer RAID 500 Adapter
0A89463	ThinkServer RAID 700 Adapter
67Y2647	ThinkServer RAID 700 Battery
4XB0F28645	ThinkServer 9280-8e 6G HBA
0C19506	Ethernet Server Adapter Card Dual Port - I350-T2
0C19507	Ethernet Server Adapter Card Quad Port - I350-T4
0C19511	PCI-E to 2 Serial port card

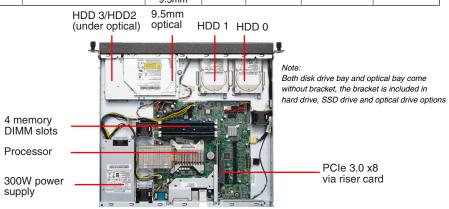
Type- model <sup>1</sup> Announced	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics) June 2014 - 70F8	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
70F80000UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	3
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	3

# ThinkServer RS140 with 2.5" Disk Bay TopSeller Models - 70F3 (June 2014)

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
70F30006UX	Core i3-4130 2C/3.4GHz/3MB/1600MHz/Intel HD 4400	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F30007UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F30008UX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F30009UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F3000AUX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F3000BUX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 8GB 1600MHz ECC	RAID 500 + upgrade key	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F3000CUX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 8GB 1600MHz ECC	RAID 700	No	Open	DVD±RW 9.5mm	No	4-Post	No	1

40/3.40112	2/8/VIB/ 1800/VITIZ/IIITEI HD F4600						
Components	Specification						
Mechanical	<ul> <li>1U rack with rail kit (2-post or 4-post, depending on models)</li> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> <li>6.85 kg (15.1 lb) when fully configured</li> </ul>						
Chipset	Intel C226 Chipset, one LGA1150 socket for processor						
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	Supports one of the following, depending on models:  One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz)  One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz)  One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)						
Memory DIMMs	Four DDR3 DIMM slots, 2-channel (integrated memory controller in processor)						
Memory type/capacity	1600MHz DDR3, UDIMM, ECC; 32GB max						
RAID support	RAID 0, 1, 5, 10 with RAID 100. RAID 0, 1, 10 with RAID 500. RAID 0, 1, 5, 6, 10 with RAID 700. Optional RAID 5 upgrade key is available for the RAID 500, Optional intelligent Battery Backup Unit (iBBU08) is available for the RAID 700. RAID 100 supports SATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA 6.0Gb/s and SAS 6.0 Gb/s						
Optical drive	Supports one 9.5mm optical drive on selected model						
Disk drive bays	Up to four 2.5" hard drives, non-hot swap (see right)						
Onboard network interfaces	Two Gigabit Ethernet ports by Intel I210 on riser card; one Gigabit Ethernet port by Intel I217, dedicate/share management						
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8						
Front ports	Two USB 2.0						
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort						
Power supply	One fixed 300 watts power supply, 80-Plus Gold certified, non-hot swap						
Systems management	<ul> <li>Intel Active Management Technology 9.1 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3/12x6 v3 processors)</li> <li>ThinkServer EasyStartup/EasyUpdate</li> </ul>						
Security features	Power-on password, administrator password, and TPM (TCG 1.2-compliant)						
Graphics	Integrated Intel HD Graphcis in processor						
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi)						
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x 1)						
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html						

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Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)					
Temperature - non operating (no package)	-10 °C to 60 °C					
Temperature - non operating (with package)	-40 °C to 70 °C					
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)					
Humidity - operating	10%~80%, non-condensing					
Humidity - non operating (no package)	10%~90%, non-condensing					
Humidity - non operating (with package)	10%~90%, non-condensing					



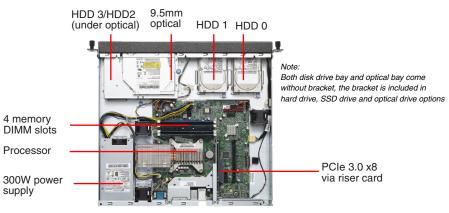
# Core Options for ThinkServer RS140 with 2.5" disk bay (partial)

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	<b>Description</b> ThinkServer 2.5" 300GB 10K SAS 6Gbps Hard Drive for RS-Series
4XB0F28673	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hard Drive for RS-Series ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28677	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 120GB SATA 6Gbps Solid State Drive for RS-Series
	ThinkServer 2.5" 240GB SATA 6Gbps Solid State Drive for RS-Series
	ThinkServer 2.5" 480GB SATA 6Gbps Solid State Drive for RS-Series ThinkServer 2 Post Rail kit for RS-Series
	ThinkServer 4 Post Rail kit for RS-Series
0C19499	4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19500	8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0A89464 0A89407	ThinkServer RAID 500 Adapter ThinkServer RAID 500 Upgrade Key for Advanced RAID
0A89463	ThinkServer RAID 700 Adapter
67Y2647	ThinkServer RAID 700 Battery
	ThinkServer 9280-8e 6G HBA
0C19506 0C19507	Ethernet Server Adapter Card Dual Port - I350-T2 Ethernet Server Adapter Card Quad Port - I350-T4
0C19507 0C19511	PCI-E to 2 Serial port card
	•

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500 + upgrade key	RAID 1	2 x 500GB 2.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1
	Voon E2 1245 v2		RAID 700	RAID 5	4 x 500GB 2.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1

Components	Specification
Mechanical	<ul> <li>1U rack with rail kit (2-post or 4-post, depending on models)</li> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> <li>6.85 kg (15.1 lb) when fully configured</li> </ul>
Chipset	Intel C226 Chipset, one LGA1150 socket for processor
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	Supports one of the following, depending on models:  One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz)  One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz)  One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)
Memory DIMMs	Four DDR3 DIMM slots, 2-channel (integrated memory controller in processor)
Memory type/capacity	1600MHz DDR3, UDIMM, ECC; 32GB max
RAID support	RAID 0, 1, 5, 10 with RAID 100. RAID 0, 1, 10 with RAID 500. RAID 0, 1, 5, 6, 10 with RAID 700. Optional RAID 5 upgrade key is available for the RAID 500, Optional intelligent Battery Backup Unit (iBBU08) is available for the RAID 700. RAID 100 supports SATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA 6.0Gb/s
Optical drive	Supports one 9.5mm optical drive on selected model
Disk drive bays	Up to four 2.5" hard drives, non-hot swap (see right)
Onboard network	Two Gigabit Ethernet ports by Intel I210 on riser card;
interfaces	one Gigabit Ethernet port by Intel I217, dedicate/share management
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8
Front ports	Two USB 2.0
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort
Power supply	One fixed 300 watts power supply, 80-Plus Gold certified, non-hot swap
Systems management	<ul> <li>Intel Active Management Technology 9.1 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3/12x6 v3 processors)</li> <li>ThinkServer EasyStartup/EasyUpdate</li> </ul>
Security features	Power-on password, administrator password, and TPM (TCG 1.2-compliant)
Graphics	Integrated Intel HD Graphcis in processor
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi)
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x 1)
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html
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Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)
Temperature - non operating (no package)	-10 °C to 60 °C
Temperature - non operating (with package)	-40 °C to 70 °C
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)
Humidity - operating	10%~80%, non-condensing
Humidity - non operating (no package)	10%~90%, non-condensing
Humidity - non operating (with package)	10%~90%, non-condensing



## Core Options for ThinkServer RS140 with 2.5" disk bay (partial)

Type- model <sup>1</sup> Announced	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics) June 2014 - 70F2	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 100	No	Open	No	No	4-Post	No	3
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 700	No	Open	No	No	4-Post	No	3

_												Chassis	_				
Type- model	Processor	2nd CPU	Memory	RAID controller	Disk	Disk drives	SD module	Optical	Cloto	Discrete ethernet			System	Power	Preloaded OS	Rack kit	
illouei	FIOCESSOI	ZIIU CPU		Controller	bays	DISK UTIVES	module	Optical	31015	ememer	IFIVI	SWILCII	mgmt		03	KIL	wty
70D6000XUX	1xXeon E5-2609 v3 6C/	4XG0F28847	1x4GB	RAID110i	4x3.5"	Open	No	DVD±RW	1	No	ТРМ	Switch	TSM	450Wx1	No	Slide	3-year
	1.9GHz/15MB/85W/1600MHz		2133MHz RDIMM		HS	- 1							Premium	Gold			, ,
70D6000YUX	1xXeon E5-2620 v3 6C/	4XG0F28846	1x8GB	RAID500	4x3.5"	Open	No	DVD±RW	1	No	ТРМ	Switch	TSM	450Wx2	No	Slida	3-year
70D000010X	2.4GHz/15MB/85W/1866MHz	47/301 20040	2133MHz RDIMM	TITALD 3000   F	HS	Open	140	DVD±1100		140	' ' ' '	Owner	Premium	Gold	140	Onde	o year
70D60010UX	1xXeon E5-2650 v3 10C/	4XG0F28843	1x16GB	RAID710	4x3.5"	0000	Na	DVD±RW	-1	No	ТРМ	Switch	TSM	450Wx2	No	Clida	2 400
70D600100X	2.3GHz/25MB/105W/2133MHz	4XGUF28843	2133MHz RDIMM	+CacheVault	HS	Open	No	DVD±RW	'	INO	I PIVI	SWILCH	Premium	Gold	INO	Silde	3-year
70D60011UX	2xXeon E5-2640 v3 8C/		8x16GB	RAID710	4x3.5"	1x4TB 3.5"	No	DVD±RW	2	No	TDM	Switch	TSM	550Wx2	No	Clido	3-year
700000110X	2.6GHz/20MB/90W/1866MHz	-	2133MHz RDIMM	naid/10	HS	SATA6.0 7.2K HDD	INO	DVD±NVV		INO	I F IVI	SWILCH	Premium	Platinum	INO	Silue	3-year

Components	Specification	C
Form factor	1U rack	0
Processor	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to 1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
1 10000001	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 30MB cache	F
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	E
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	N
Memory protection	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	E
RAID support	optional key for RAID5.  RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key	s
Disk drive bays	Up to 4 x 3.5" disk drive bays	۷
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	
	3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/ 2.5" SAS SSD (12Gbs)   200GB/400GB/800GB	
Internal storage	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB SDHC flash card 8GB/32GB Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	
Optical drive	3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	Ε
Tape drive bays	No internal tape bay	U
·	One dedicated management port, two Gigabit Ethernet ports (RJ-45).	S
Network interfaces	Supports optional discrete network adapters via PCIe slots  Power-on and administrator password. Optional Trusted Platform Module (TCG	S
Security features	1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium.	4
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager,	4 4 4
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V	4
supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2	
Rack kit	Optional slide or static rack kit on selected model	
Base warranty	1 or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolution	6MB memory, one DisplayPort on ution: 1920x1200@60Hz	front,							
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	5 (dedicated mgmt), two ethernet	, one serial							
Cooling	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
Humidity - storage (with package) 8%~90%, non-condensing										
Weight	Minimum configuration: 13 kg (28	.66 lb), maximum: 19.1 kg (42.11	b)							
Dimensions	Height: 43 mm (1.7 in), width: 482	mm (19 in), depth: 781.5 mm (30	.77 in)							



Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4X70F26391 32GB 4R X4 FC4-T/000ER EnDIMIN DBR4-2133 4GBI 4XF0G45865 SDHC Flash Memory Module 4X70F28593 32GB SDHC Flash Memory card 4XB0F28690 Lenovo ThinkServer RAID110i Raid 5 Upgrade 4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID 4XF0G45867 ThinkServer System Manager Premium 4X20F28567 750W Titanium Hot Swap Power Supply

Type-				RAID	Disk		SD			Discrete		Chassis intrusion	System		Preloaded	Rack	Base
model	Processor	2nd CPU	Memory	controller	bays	Disk drives	module	Optical	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
70D6001YUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x4GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	No	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60020UX	1xVoon EE 2600 x2 60/	4XG0E28847	1,000	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60021UX	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28846	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
1701060022018	2xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	-	2x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Form factor    1U rack	Components	Specification	(
Up to two <b>109M inter xeon</b> E5-260U v3 family processors with 12 cores up to 1.8 GHz, 10 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz, 10 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz, 10 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz, 10 cores up to 2.4 GHz, 4 cores up to 2.4 GHz, 5 cores up to 2.4 GHz, 6 cores up to 2.4 GHz, 5 cores up to 2.4 GHz, 6 cores	Form factor		Ш
Processor  1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz. Two OPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 30MB cache  Memory DIMMs  Memory capacity  Memory capacity  Memory protection  Example Mall D. 1, 10 with enbedded RAID 110i, G6b/s SATA, optional key for RAID5.  RAID 0, 1, 10 with enbedded RAID 110i, G6b/s SATA, optional key for RAID5.  RAID 0, 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional cacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Disk drive bays  Example Memory protection  Example Mall D. 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Disk drive bays  Example Memory protection  Example Mall D. 1, 10, 10, 10, 10, 10, 10, 10, 10, 10,		Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	Ш
A colles by 10 3 GHz. Wo GPT IIIN Q ID 13 GHS.   Up to 2133MHz memory speed. Up to 30MB cache   16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.   RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz   Memory capacity   256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed   ECc, memory mirroring, lockstep, and memory sparing   RAID 0, 1, 10 with membedded RAID 110i, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10 with membedded RAID 110i, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional cache-vault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key   Up to 4 x 3.5" disk drive bays   Up to 4 x 3.5" disk drive bays   Up to 4 x 3.5" disk drive bays   Optional SD module   Optional SD module, supports up to 2 optional SDHC flash cards   3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (12Gbs)   200GB/240GB/300GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB/800GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB/800GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB/800GB   2.5" SATA SCI (12Gbs)   200GB/400GB/800GB/800GB/800GB   2.5" SATA SCI (12Gbs)   200GB/400GB/800GB/800GB/800GB   2.5" SATA SCI (12Gbs)   200GB/400GB/800GB/	Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
Up to 2133MHz memory speed. Up to 30MB cache	1 10003301		ı
RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz		Up to 2133MHz memory speed. Up to 30MB cache	IĽ
Memory protection   ECC, memory mirroring, lockstep, and memory sparing   RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key   Up to 4 x 3.5" disk drive bays   Up to 4 x 3.5" disk drive bays   Optional SD module   Optional SD module, supports up to 2 optional SDHC flash cards   3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SSD (12Gbs)   200GB/400GB/800GB   SDHC flash card   BGB/32GB   Note: 1.845 drive needs SAS adapter, 2.5 DHC flash card needs SDHC flash memory module. 3.0 n.3.5" models, 25" drive comes with a 3.5" carrier.   Optional one UltraSilm optical drive bay, supports DVD-ROM or DVD±RW   Not internal tape bay   One dedicated management port, two Gigabit Ethernet ports (RJ-45).   Supports optional discrete network adapters via PCIe slots   Supports optional discrete network adapters via PCIe slots   Supports DVD-ROM or DVD±RW   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant). Optional chassis intrusion switch   Supports ThinkServer System Manager, (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Compliant baseboard management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner   Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.   500 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Plat	Memory DIMMs	RDIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	
RAID 0, 1, 10 with embedded RAID 1101, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, optional key for RAID5. RAID 0, 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Up to 4 x 3.5" disk drive bays  SD module  Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SASA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/  3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB	Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	N
RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5. RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Disk drive bays  Up to 4 x 3.5" disk drive bays  SD module  Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SATA (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 2.5" SAS SSD (12Gbs) 200GB/400GB/800GB SDHC flash card 8GB/32GB  Note: 1.5AS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3.0.3.5" models. 2.5" drive comes with a.3." carrier.  Optical drive  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  No internal tape bay  Network interfaces  Security features  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCIe slots  Security features  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports ThinkServer password. Optional Trusted Platform Module (TCG 1.2compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium (1012, 2012,	Memory protection		Ė
Disk drive bays SD module Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/  3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/  2.5" SATA SD (6Gbs HDD)   1TB/2TB/3TB/4TB/  2.5" SATA SSD (12Gbs)   200GB/400GB/800GB   2.5" SATA SSD (12Gbs)   200GB/400GB/800GB   2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB   3.0" 3.5" models, 2.5" drive needs SAS adapter, 2. SDHC flash card needs SDHC flash memory module, 3.0" 3.5" models, 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW   No internal tape bay Network interfaces  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant), Optional chassis intrusion switch   Supports ThinkServer System Manager (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Control Panel LEDs shows the status of power, ID, network, system.   Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.   550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W Titanium is 200V - 240V, others are 110V - 240V   Microsoft Windows Server 2012 R2, 2012, and 2008 R2,   Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2   Rack kit   Optional slide or static rack kit on selected model   1 or 3-year limited onsite service with 9x5/NBD.	RAID support	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, optional key for RAID5. RAID 0, 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath	E
SD module Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SATA (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS SS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 2.5" SAS SSD (12GBb) 200GB/400GB/800GB 2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB SDHC flash card 8GB/32GB Note: 1. 8AS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models. 2.5" drive comes with a 3.5" carrier. Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW No internal tape bay Network interfaces Security features One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThirkServer System Manager (TSM), optional TSM Premium. UEF1. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThirkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W itanium is 200V - 240V, others are 110V - 240V Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Small Business Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2 Rack kit Optional slide or static rack kit on selected model 1 or 3-year limited onsite service with 9x5/NBD.	Dick drive have		V
Internal storage    Sar			
Internal storage    SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/    2.5" SAS SSD (12Gbs)   200GB/400GB/800GB     2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB     SDHC flash card   8GB/32GB     Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models. 2.5" drive comes with a 3.5" carrier.     Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW     Tape drive bays   No internal tape bay     No internal tape bay     Note dedicated management port, two Gigabit Ethernet ports (RJ-45).     Supports optional discrete network adapters via PCle slots     Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch     Supports ThinkServer System Manager (TSM), optional TSM Premium.     UEFI. Onboard Aspeed AST2400 graphics/management processor,     IPMI 2.0-compliant baseboard management controller (BMC).     Control Panel LEDs shows the status of power, ID, network, system.     Supports ThinkServer management software: Diagnostics, Deployment Manager, energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	3D Illoudie		ഥ
Internal storage    2.5" SAS SSD (12Gbs)   200GB/400GB/800GB   2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB   SDHC flash card   8GB/32GB   8GB/32GB   Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3.0 n 3.5" models. 2.5" drive comes with a 3.5" carrier.  Optical drive   Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW   Tape drive bays   No internal tape bay   No internal tape bay   No internal tape bay   One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots   Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch   Supports ThinkServer System Manager (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Control Panel LEDs shows the status of power, ID, network, system.   Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner   Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.   S50 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V   Microsoft Windows Server 2012 R2, 2012, and 2008 R2,   Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.   SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2   Rack kit   Optional slide or static rack kit on selected model   1 or 3-year limited onsite service with 9x5/NBD.			
Internal storage    2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB   SDHC flash card   SGB/32GB			
SDHC flash card Note: 1. SAS drive needs SAS adapter 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models. 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  Tape drive bays  No internal tape bay  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Internal storage		d
Note: 1. SAS drive needs SAS adapter: 2. SDHC flash card needs SDHC flash memory module. 3.0 n.3.5" adrive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  Tape drive bays  No internal tape bay  Network interfaces  Network interfaces  Supports optional discrete network adapters via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager,  Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 750 W ac power supplies.  550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Small Business Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			-
Optical drive Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  Tape drive bays No internal tape bay  Network interfaces One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots  Security features Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner Up to two redundant hot-swap 450 W ac or 550 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Optional one Ottrasilm optical drive bay, supports DVD-ROM or DVD±RW		3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.	F
Network interfaces  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCIe slots  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Supports optional discrete network adapters via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac power supplies.  550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Operating systems  Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.  SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Tape drive bays		
Security features  1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Network interfaces	Supports optional discrete network adapters via PCIe slots	
Systems management  Supports ThinkServer system Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft Asystem Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 750 W ac power supplies.  550 W is 80 PLUS Platinum qualified, 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.  SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  Tor 3-year limited onsite service with 9x5/NBD.	Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	
Systems management  Mericology Systems management  Systems management  Managem		1.2-compliant). Optional chassis intrusion switch	
Systems management  IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.		Supports MilikServer System Manager (15M), optional 15M Premium.	
Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Systems		
Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	management		
System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Operating systems Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Power supply    Up to two redundant hot-swap 450 W ac or 550 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V    Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2    Rack kit   Optional slide or static rack kit on selected model   1 or 3-year limited onsite service with 9x5/NBD.			٠.
Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Operating systems Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2 Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Power supply	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others	
Operating systems   Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit   Optional slide or static rack kit on selected model  Base warranty   1 or 3-year limited onsite service with 9x5/NBD.			
Supported 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Operating systems		
Rack kit Optional slide or static rack kit on selected model  Base warranty 1 or 3-year limited onsite service with 9x5/NBD.	supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	
Rase warranty 1 or 3-year limited onsite service with 9x5/NBD.	Back kit		
	Base warranty		

Components	Specification										
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolu	6MB memory, one DisplayPort on	front,								
Front ports	Two USB 2.0, one DisplayPort	ution: 1320X1200@00112									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)									
Cooling	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap										
Hot-swap parts	Disk drives, power supplies	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 I	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)									
	Temperature - non operating (no package)	-10 °C to 60 °C									
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C									
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)									
	Humidity - operating	8%~90%, non-condensing									
	Humidity - storage (with package)	8%~90%, non-condensing									
Weight	Minimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)										
Dimensions	Height: 43 mm (1.7 in), width: 482	2 mm (19 in), depth: 781.5 mm (30	.77 in)								



Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45865 SDHC Flash Memory Module
4X70F28593 32GB SDHC Flash Memory card
4XB0F28690 Lenovo ThinkServer RAID110i Raid 5 Upgrade
4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID
4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply

_												Chassis			L		
Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disk drives	SD module	Optical	Slots	Discrete ethernet		intrusion switch	System	Power	Preloaded OS	Hack kit	wty
70D60023UX	1vVoon E5 2650 v2 10C/	4XC0E28843	1v0CB	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No		3-year
70D60024UX	1xXeon E5-2660 v3 10C/ 2.6GHz/25MB/105W/2133MHz	4XG0F28842	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60025UX	1vVoon E5 2602 v2 60/	4XC0E28848	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60026UX	1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz	4XG0F28845	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification	(
Form factor	1U rack	ıŀ.
i omi idoloi	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	
D	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
Processor	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s.	١,
	Up to 2133MHz memory speed. Up to 30MB cache	1
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.	
INICITIOT Y DITVITVIS	RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	ŀ
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	1
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	ıl
	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.	Ш
	RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA,	
RAID support	optional key for RAID5.	5
	RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory,	ıl`
	optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath lupgrade key	Ш
Disk drive bays	Up to 4 x 3.5" disk drive bays	١
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	1
3D module		ᄖ
	3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/	
	2.5" SAS \$\frac{1.2R \text{ 6G0S \text{ FIDD}}}{2.00\text{ FIDD}}  \text{ FIDD}   \text{ FIDD}  \text{ FIDD}   \text{ FIDD}   \text{ FIDD}   \text{ FIDD}    \text{ FIDD}  \	١.
Internal storage	2.5" SATA SSD (12Gbs) 120GB/40GB/800GB 120GB/800GB	d
	SDHC flash card 8GB/32GB	1
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	
0	3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.	E
Optical drive	Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	ī
Tape drive bays	No internal tape bay	S
Network interfaces	One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCIe slots	S
0	Power-on and administrator password. Optional Trusted Platform Module (TCG	C
Security features	1.2-compliant). Optional chassis intrusion switch	4
	Supports ThińkServer System Manager (TSM), optional TSM Premium.	4
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	4
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	4
management	Control Panel LEDs shows the status of power, ID, network, system.	4
	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	
	System Center Operations Manager, Power Planner Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4
	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium	4
Power supply	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others	
	are 110V - 240V	
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,	
Operating systems	Windows Small Business Server 2011, Windows Server Storage 2012 R2 and	
supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	
''	SUSÉ Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2	
Rack kit	Optional slide or static rack kit on selected model	
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.	
Dase warranty	Some parts are Customer Replaceable Units	

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolution	6MB memory, one DisplayPort on ution: 1920x1200@60Hz	front,							
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	15 (dedicated mgmt), two ethernet	, one serial							
Cooling	6 (5+1, dual processors) or 4 (3+	1, single processor) fans, non-hot	swap							
Hot-swap parts	Disk drives, power supplies		·							
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 I	Bels (Maximum configuration)								
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)									
Dimensions	Height: 43 mm (1.7 in), width: 482	2 mm (19 in), depth: 781.5 mm (30	.77 in)							



Up to 2 PCle 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCle 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCle 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4X70F28591 32GB 4R X4 PC4-17000ER ERDIMM DDR4-2133 4Gbit
4XF0G45865 SDHC Flash Memory Module
4X70F28593 32GB SDHC Flash Memory card
4XB0F28690 Lenovo ThinkServer RAID 110i Raid 5 Upgrade
4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID
4XF0G45867 ThinkServer System Manager Premium
4X20F28576 750W Titanium Hot Swap Power Supply
100 Power to VCA December.

Type-	_			RAID	Disk		M.2/SD			Discrete		Chassis intrusion		Preloaded		Base
model	Processor	2nd CPU	Memory	controller	Bays	Disk drives	module	Slots	Optical	ethernet	TPM	switch	mgmt	os	Power	wty
70D60035UX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	2x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	2x1TB 3.5" SATA6Gbs 7.2K	No	1	DVD±RW	No	TPM	No	TSM Premium	No	750Wx2 Platinum	3-year

Form factor    1U rack	Components	Specification	(
Up to two <b>109M inter xeon</b> E5-260U v3 family processors with 12 cores up to 1.8 GHz, 10 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz, 10 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz, 10 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz, 10 cores up to 2.4 GHz, 4 cores up to 2.4 GHz, 5 cores up to 2.4 GHz, 6 cores up to 2.4 GHz, 5 cores up to 2.4 GHz, 6 cores	Form factor		Ш
Processor  1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz. Two OPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 30MB cache  Memory DIMMs  Memory capacity  Memory capacity  Memory protection  Example Mall D. 1, 10 with enbedded RAID 110i, G6b/s SATA, optional key for RAID5.  RAID 0, 1, 10 with enbedded RAID 110i, G6b/s SATA, optional key for RAID5.  RAID 0, 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional cacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Disk drive bays  Example Memory protection  Example Mall D. 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Disk drive bays  Example Memory protection  Example Mall D. 1, 10, 10, 10, 10, 10, 10, 10, 10, 10,		Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	Ш
A colles by 10 3 GHz. Wo GPT IIIN Q ID 13 GHS.   Up to 2133MHz memory speed. Up to 30MB cache   16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.   RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz   Memory capacity   256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed   ECc, memory mirroring, lockstep, and memory sparing   RAID 0, 1, 10 with membedded RAID 110i, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10 with membedded RAID 110i, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional cache-vault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key   Up to 4 x 3.5" disk drive bays   Up to 4 x 3.5" disk drive bays   Up to 4 x 3.5" disk drive bays   Optional SD module   Optional SD module, supports up to 2 optional SDHC flash cards   3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SCI (12Gbs)   200GB/240GB/300GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB/800GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB/800GB   2.5" SATA SCI (6Gbs)   120GB/240GB/300GB/800GB/800GB   2.5" SATA SCI (12Gbs)   200GB/400GB/800GB/800GB/800GB   2.5" SATA SCI (12Gbs)   200GB/400GB/800GB/800GB/800GB   2.5" SATA SCI (12Gbs)   200GB/400GB/800GB/	Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
Up to 2133MHz memory speed. Up to 30MB cache	1 10003301		ı
RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz		Up to 2133MHz memory speed. Up to 30MB cache	IĽ
Memory protection   ECC, memory mirroring, lockstep, and memory sparing   RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5.   RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key   Up to 4 x 3.5" disk drive bays   Up to 4 x 3.5" disk drive bays   Optional SD module   Optional SD module, supports up to 2 optional SDHC flash cards   3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/   2.5" SAS SSD (12Gbs)   200GB/400GB/800GB   SDHC flash card   BGB/32GB   Note: 1.845 drive needs SAS adapter, 2.5 DHC flash card needs SDHC flash memory module. 3.0 n.3.5" models, 25" drive comes with a 3.5" carrier.   Optional one UltraSilm optical drive bay, supports DVD-ROM or DVD±RW   Not internal tape bay   One dedicated management port, two Gigabit Ethernet ports (RJ-45).   Supports optional discrete network adapters via PCIe slots   Supports optional discrete network adapters via PCIe slots   Supports DVD-ROM or DVD±RW   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant). Optional chassis intrusion switch   Supports ThinkServer System Manager, (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Compliant baseboard management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner   Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.   500 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Plat	Memory DIMMs	RDIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	
RAID 0, 1, 10 with embedded RAID 1101, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, optional key for RAID5. RAID 0, 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Up to 4 x 3.5" disk drive bays  SD module  Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SASA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/  3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB	Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	N
RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5. RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key  Disk drive bays  Up to 4 x 3.5" disk drive bays  SD module  Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SATA (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 2.5" SAS SSD (12Gbs) 200GB/400GB/800GB SDHC flash card 8GB/32GB  Note: 1.5AS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3.0.3.5" models. 2.5" drive comes with a.3." carrier.  Optical drive  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  No internal tape bay  Network interfaces  Security features  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCIe slots  Security features  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports ThinkServer password. Optional Trusted Platform Module (TCG 1.2compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium (1012, 2012,	Memory protection		Ė
Disk drive bays SD module Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/  3.5" SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/  2.5" SATA SD (6Gbs HDD)   1TB/2TB/3TB/4TB/  2.5" SATA SSD (12Gbs)   200GB/400GB/800GB   2.5" SATA SSD (12Gbs)   200GB/400GB/800GB   2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB   3.0" 3.5" models, 2.5" drive needs SAS adapter, 2. SDHC flash card needs SDHC flash memory module, 3.0" 3.5" models, 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW   No internal tape bay Network interfaces  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant), Optional chassis intrusion switch   Supports ThinkServer System Manager (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Control Panel LEDs shows the status of power, ID, network, system.   Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.   550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum qualified, 750 W Titanium is 200V - 240V, others are 110V - 240V   Microsoft Windows Server 2012 R2, 2012, and 2008 R2,   Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2   Rack kit   Optional slide or static rack kit on selected model   1 or 3-year limited onsite service with 9x5/NBD.	RAID support	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, optional key for RAID5. RAID 0, 1, 10, 5, 6 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath	E
SD module Optional SD module, supports up to 2 optional SDHC flash cards  3.5" SATA (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS SS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 2.5" SAS SSD (12GBb) 200GB/400GB/800GB 2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB SDHC flash card 8GB/32GB Note: 1. 8AS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models. 2.5" drive comes with a 3.5" carrier. Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW No internal tape bay Network interfaces Security features One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThirkServer System Manager (TSM), optional TSM Premium. UEF1. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThirkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W itanium is 200V - 240V, others are 110V - 240V Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Small Business Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2 Rack kit Optional slide or static rack kit on selected model 1 or 3-year limited onsite service with 9x5/NBD.	Dick drive have		V
Internal storage    Sar			
Internal storage    SAS (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/    2.5" SAS SSD (12Gbs)   200GB/400GB/800GB     2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB     SDHC flash card   8GB/32GB     Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models. 2.5" drive comes with a 3.5" carrier.     Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW     Tape drive bays   No internal tape bay     No internal tape bay     Note dedicated management port, two Gigabit Ethernet ports (RJ-45).     Supports optional discrete network adapters via PCle slots     Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch     Supports ThinkServer System Manager (TSM), optional TSM Premium.     UEFI. Onboard Aspeed AST2400 graphics/management processor,     IPMI 2.0-compliant baseboard management controller (BMC).     Control Panel LEDs shows the status of power, ID, network, system.     Supports ThinkServer management software: Diagnostics, Deployment Manager, energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	3D Illoudie		ഥ
Internal storage    2.5" SAS SSD (12Gbs)   200GB/400GB/800GB   2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB   SDHC flash card   8GB/32GB   8GB/32GB   Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3.0 n 3.5" models. 2.5" drive comes with a 3.5" carrier.  Optical drive   Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW   Tape drive bays   No internal tape bay   No internal tape bay   No internal tape bay   One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots   Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch   Supports ThinkServer System Manager (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Control Panel LEDs shows the status of power, ID, network, system.   Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner   Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.   S50 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V   Microsoft Windows Server 2012 R2, 2012, and 2008 R2,   Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.   SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2   Rack kit   Optional slide or static rack kit on selected model   1 or 3-year limited onsite service with 9x5/NBD.			
Internal storage    2.5" SATA SSD (6Gbs)   120GB/240GB/300GB/480GB/600GB/800GB   SDHC flash card   SGB/32GB			
SDHC flash card Note: 1. SAS drive needs SAS adapter 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models. 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  Tape drive bays  No internal tape bay  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Internal storage		d
Note: 1. SAS drive needs SAS adapter: 2. SDHC flash card needs SDHC flash memory module. 3.0 n.3.5" adrive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  Tape drive bays  No internal tape bay  Network interfaces  Network interfaces  Supports optional discrete network adapters via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager,  Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 750 W ac power supplies.  550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Small Business Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Optical drive Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW  Tape drive bays No internal tape bay  Network interfaces One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCle slots  Security features Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner Up to two redundant hot-swap 450 W ac or 550 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Optional one Ottrasilm optical drive bay, supports DVD-ROM or DVD±RW		3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.	F
Network interfaces  One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCIe slots  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Supports optional discrete network adapters via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac power supplies.  550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Operating systems  Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.  SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Tape drive bays		
Security features  1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Network interfaces	Supports optional discrete network adapters via PCIe slots	
Systems management  Supports ThinkServer system Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft Asystem Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 750 W ac power supplies.  550 W is 80 PLUS Platinum qualified, 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.  SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  Tor 3-year limited onsite service with 9x5/NBD.	Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	
Systems management  Mericology Systems management  Systems management  Managem		1.2-compliant). Optional chassis intrusion switch	
Systems management  IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.		Supports MilikServer System Manager (15M), optional 15M Premium.	
Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Systems		
Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	management		
System Center Operations Manager, Power Planner  Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V  Microsoft Windows Server 2012 R2, 2012, and 2008 R2,  Operating systems Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit  Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.			
Power supply    Up to two redundant hot-swap 450 W ac or 550 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V    Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2    Rack kit   Optional slide or static rack kit on selected model   1 or 3-year limited onsite service with 9x5/NBD.			٠.
Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Operating systems Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2 Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Power supply	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others	
Operating systems   Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit   Optional slide or static rack kit on selected model  Base warranty   1 or 3-year limited onsite service with 9x5/NBD.			
Supported 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2  Rack kit Optional slide or static rack kit on selected model  1 or 3-year limited onsite service with 9x5/NBD.	Operating systems		
Rack kit Optional slide or static rack kit on selected model  Base warranty 1 or 3-year limited onsite service with 9x5/NBD.	supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	
Rase warranty 1 or 3-year limited onsite service with 9x5/NBD.	Back kit		
	Base warranty		

Components	Specification								
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolu	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz							
Front ports	Two USB 2.0, one DisplayPort								
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	5 (dedicated mgmt), two ethernet, one seria	al						
Cooling	6 (5+1, dual processors) or 4 (3+	1, single processor) fans, non-hot swap							
Hot-swap parts	Disk drives, power supplies								
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 I	Bels (Maximum configuration)							
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)							
	Temperature - non operating (no package)	-10 °C to 60 °C							
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C							
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)							
	Humidity - operating	8%~90%, non-condensing							
	Humidity - storage (with package)	8%~90%, non-condensing							
Weight	Minimum configuration: 13 kg (28	finimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)							
Dimensions	Height: 43 mm (1.7 in), width: 482	mm (19 in), depth: 781.5 mm (30.77 in)							



Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

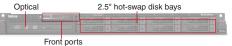
4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4X70F28591 32GB 4R X4 PC4-17000LR LRDIMM DDR4-2133 4Gbit
4XF0G45865 SDHC Flash Memory Module
4X70F28593 32GB SDHC Flash Memory card
4XB0F28690 Lenovo ThinkServer RAID 110i Raid 5 Upgrade
4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID
4XF0G45867 ThinkServer System Manager Premium
4X20F28576 750W Titanium Hot Swap Power Supply
120F28280 120F

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disk drives	SD module	Optical	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70D8000TUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28847	1x8GB 2133MHz RDIMM	RAID710 +CacheVault	8x2.5" HS	Open	No	DVD±RW	1	No	ТРМ	Switch	TSM Premium	550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28846	1x16GB 2133MHz RDIMM	RAID710 +CacheVault	8x2.5" HS	Open	No	DVD±RW	1	No	ТРМ	Switch	TSM Premium	550Wx1 Platinum	No	Slide	3-year
70D8000VUX	2xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	-	8x16GB 2133MHz RDIMM	RAID710 +CacheVault	8x2.5" HS	6x300GB 2.5" SAS6.0 10K HDD	No	DVD±RW	2	No	TPM	Switch	TSM Premium	750Wx2 Platinum	No	Slide	3-year

Components	Specification	(
Form factor	1U rack	
	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	1
Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
Processor	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s.	F
	Up to 2133MHz memory speed. Up to 30MB cache	
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.	C
INICITIOTY DIIVIIVIS	RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	F
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	Ν
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	Ė
	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.	
	RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	L
DAID cupport	optional key for RAID5/50.	E
RAID support	<b>RAID 0, 1, 10, 5, 50, 6, 60</b> with <b>RAID 710</b> , PCIe adapter, 6Gb/s SAS/SATA, 1GB	S
	memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or	
	FastPath upgrade key	
Disk drive bays	Up to 8 x 2.5" disk drive bays	٧
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	
	2.5" SATA (7.2K 6Gbs HDD) 500GB/1TB	_
	2.5" SAS (10K 6Gbs HDD) 300GB/600GB/900GB/1.2TB	
	2.5" SAS (15K 6Gbs HDD) 146GB/300GB/450GB/600GB	1
Internal storage	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB	
	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB	
	SDHC flash card 8GB/32GB	
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	E
Optical drive	Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	Ĺ
Tape drive bays	No internal tape bay	S
Network interfaces	One dedicated management port, two Gigabit Ethernet ports (RJ-45).	
TTOTTOTTC IIITOTTGGGG	Supports optional discrete network adapters via PCIe slots	C
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	4
,	1.2-compliant). Optional chassis intrusion switch	4
	Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,	4
	IPMI 2.0-compliant baseboard management controller (BMC).	4
Systems	Control Panel LEDs shows the status of power, ID, network, system.	4
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4
	System Center Operations Manager, Power Planner	4
	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4
	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium	
Power supply	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others	
	are 110V - 240V	
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,	
Operating systems		
supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	
11.	SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2	
Rack kit	Optional slide or static rack kit on selected model	
	1 or 3-year limited onsite service with 9x5/NBD.	
Base warranty	Some parts are Customer Replaceable Units	

Components	Specification		
Graphics		6MB memory, one DisplayPort on	front,
Graphics	one VGA on rear. Maximum resol	ution: 1920x1200@60Hz	
Front ports	Two USB 2.0, one DisplayPort		
Rear ports	One VGA, two USB 3.0, one RJ-4	15 (dedicated mgmt), two ethernet,	one serial
near ports	(9-pin)		
Cooling	6 (5+1, dual processors) or 4 (3+	1, single processor) fans, non-hot s	swap
Hot-swap parts	Disk drives, power supplies		
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4	Bels (Maximum configuration)	
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	
	Temperature - non operating (no package)	-10 °C to 60 °C	
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C	
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)	
'	Humidity - operating	8%~90%, non-condensing	
	Humidity - storage (with package)	8%~90%, non-condensing	
Weight	Minimum configuration: 13 kg (28	.66 lb), maximum: 19.1 kg (42.11 l	b)
Dimensions		2 mm (19 in), depth: 781.5 mm (30.	





Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45865 SDHC Flash Memory Module 4X70F28593 32GB SDHC Flash Memory card

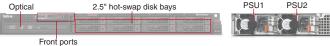
4XB0F28690 Lenovo ThinkServer RAID 110i Raid 5 Upgrade 4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

												Chassis					
Type-	_			RAID	Disk		SD		<b>.</b> .	Discrete		intrusion	•	_	Preloaded		
model	Processor	2nd CPU	Memory	controller	bays	Disk drives	module	Optical	Slots	ethernet	IPM	switch	mgmt	Power	os	kit	wty
70D8001TUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x4GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	No	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D8001UUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28847	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D8001VUX	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28846	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	4XG0F28844	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification	(
Form factor	1U rack	C
Processor	4 corpo un to 2 CHz. Two OBI link un to 0.6 CT/o	F
	Up to 2133MHz memory speed. Up to 30MB cache	F
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	C
Memory capacity		Ν
Memory protection		r
RAID support		E
Disk drive bays		ν
SD module		Č
OD IIIOddio	2.5" SATA (7.2K 6Gbs HDD) 500GB/1TB	Ľ
	2.5" SAS (10K 6Gbs HDD) 300GB/600GB/900GB/1.2TB	
	2.5" SAS (10K 6Gbs HDD)	E
Internal storage	2.5" SAS \$\text{SAS SSD (12Gbs)}  200GB/400GB/800GB	
Internal otorage	2.5" SATA SSD (12Gbs) 200GB/400GB/800GB   2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB	-
	SDHC flash card   8GB/32GB	
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	Ε
Optical drive	Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	U
Tape drive bays	No internal tane hav	S
	One dedicated management port, two Gigabit Ethernet ports (RJ-45).	S
Network interfaces	Supports optional discrete network adapters via PCIe slots	С
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	4
-	1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium.	4
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	4
_	IPML2 0-compliant baseboard management controller (RMC)	4
Systems	Control Panel I FDs shows the status of nower ID network system	4
management	Supports ThinkServer management software: Diagnostics, Deployment Manager	4
	Fnergy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4
	System Center Operations Manager, Power Planner	4
	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4
Davisar averalis	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium	
Power supply	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others	
	are 110V - 240V	
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,	
Operating systems		
supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	
	SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2	
Rack kit	Optional slide or static rack kit on selected model	
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.	
Dase warranty	Some parts are Customer Replaceable Units	

Components	Specification										
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resol	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one VGA on rear. Maximum resolution: 1920x1200@60Hz									
Front ports	vo USB 2.0, one DisplayPort										
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial P-pin)									
Cooling	6 (5+1, dual processors) or 4 (3+	1, single processor) fans, non-hot s	swap								
Hot-swap parts	Disk drives, power supplies										
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 I	Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)									
	Temperature - non operating (no package)	-10 °C to 60 °C									
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C									
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)									
	Humidity - operating	8%~90%, non-condensing									
	Humidity - storage (with package)	8%~90%, non-condensing									
Weight	Minimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)										
Dimensions	Height: 43 mm (1.7 in), width: 482	mm (19 in), depth: 781.5 mm (30.	77 in)								





Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45865 SDHC Flash Memory Module

4X70F28593 32GB SDHC Flash Memory card

4XB0F28690 Lenovo ThinkServer RAID 110i Raid 5 Upgrade 4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID

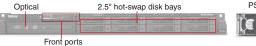
4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply

												Chassis					
Type-	Dwaaaaa	2nd CPU	Mamani	RAID	Disk	Diels duisses	SD	Ontical	Clata	Discrete		intrusion		l	Preloaded OS		
model	Processor	Zna CPU	Memory	controller	bays	Disk drives	module	Optical	Siois	ethernet	IPW	switch	mgmt	Power	US	kit	wty
1/01)X0017X11X	1xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	4XG0F28843	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2660 v3 10C/ 2.6GHz/25MB/105W/2133MHz	4XG0F28842	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D80020UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
1701080021118	1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz	4XG0F28845	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification	(
Form factor	1U rack	Ĺ
i omi idotoi	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	(
	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
Processor	4 cores up to 3 GHz Two OPI link up to 9.6 GT/s	Ė
	Up to 2133MHz memory speed. Up to 30MB cache	F
		(
Memory DIMMs		Ì
Memory capacity	0500D (DDWM4 100D 10)/5100D (LDDWM4 000D 10) 0 10DH:	ľ
	ECC, memory mirroring, lockstep, and memory sparing	Ľ
mornory protoction	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.	l
	RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	l
	optional key for RAID5/50.	E
RAID support	<b>RAID 0, 1, 10, 5, 50, 6, 60</b> with <b>RAID 710</b> , PCIe adapter, 6Gb/s SAS/SATA, 1GB	S
	memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or	l
	FastPath upgrade key	l
Disk drive bays		١
SD module		[
OB modulo		_
	2.5" SATA (7.2K 6Gbs HDD) 500GB/1TB 2.5" SAS (10K 6Gbs HDD) 300GB/600GB/900GB/1.2TB	
		E
Internal storage	2.5" SAS (15K 6Gbs HDD)	
Internal storage	Elo Orio COB (TEGRO) ECCAB/TOCAB/COCAB	
	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB SDHC flash card 8GB/32GB	
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	E
Optical drive	Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	ι
Tape drive bays	No internal tane hav	S
· · · · · · · · · · · · · · · · · · ·	One dedicated management port, two Gigabit Ethernet ports (RJ-45).	S
Network interfaces		c
0 '' ( '	Power on and administrator password, Optional Trusted Platform Module (TCG	
Security features	1.2 compliant). Optional chassis intrusion switch	4
	Supports ThinkServer System Manager (TSM) ontional TSM Premium	4
	IJEEL Onboard Aspeed AST2400 graphics/management processor	4
Systems	IPML2 0-compliant baseboard management controller (RMC)	4
	Control Farier LLDS Shows the Status of power, ID, hetwork, system.	4
management	Supports Hillingerver management software. Diagnostics, Deployment Manager,	4
	Lifergy Manager, System Manager, Farmer Fack for Viviware voether and Microsoft	4
	System Center Operations Manager, Fower Flammer	4
	100 to two redundant not-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4
Power supply	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium	
l ower supply	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others	
	are 110V - 240V	
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,	
	Windows Small Business Server 2011, Windows Server Storage 2012 R2 and	
supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	
	SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2	
Rack kit	Optional slide or static rack kit on selected model	
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.	
Dago warranty	Some parts are Customer Replaceable Units	

Components	Specification											
Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one VGA on rear. Maximum resolution: 1920x1200@60Hz										
Front ports	Two USB 2.0, one DisplayPort											
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	5 (dedicated mgmt), two ethernet	, one serial									
Cooling	6 (5+1, dual processors) or 4 (3+	1, single processor) fans, non-hot	swap									
Hot-swap parts	Disk drives, power supplies											
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)											
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
	Temperature - non operating (no package)	-10 °C to 60 °C										
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
	Humidity - operating	8%~90%, non-condensing										
	Humidity - storage (with package)	8%~90%, non-condensing										
Weight	Minimum configuration: 13 kg (28	.66 lb), maximum: 19.1 kg (42.11	b)									
Dimensions	Height: 43 mm (1.7 in), width: 482	mm (19 in), depth: 781.5 mm (30	.77 in)									





Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45865 SDHC Flash Memory Module

4X70F28593 32GB SDHC Flash Memory card

4XB0F28690 Lenovo ThinkServer RAID 110i Raid 5 Upgrade 4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID

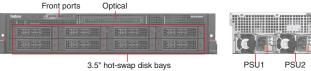
4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Rear ports

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape	Slote	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
illouei	v. ==		1000	DAIDEGO	8x3.5"	DISK UTIVES	r Cle X0 33D	Optical	unve	Siots	Culcillet	I F IVI	SWILCII	TSM	450Wx1	- 03	KIL	WLY
70DC000YUX	1.9GHz/15MB/85W/1600MHz	4XG0F28859	2133MHz RDIMM	+key	HS	Open	No/No	DVD±RW	None	2	No	TPM	Switch	Premium		No	Slide	3-year
70DC0010UX	2vVoon EE 2620 v2 6C/	_	4x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	1x8GB/No	DVD±RW	None	6	No	TPM	Switch	TSM Premium	450Wx2 Gold	No	Slide	3-year
70DC0011UX	2xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	-	8x16GB 2133MHz RDIMM		8x3.5" HS	4x4TB 3.5" SAS6.0 7.2K HDD	1x32GB/No	DVD±RW	None	6	No	TPM	Switch	TSM Premium	450Wx2 Gold	No	Slide	3-year

Components	Specification	
Form factor	2U rack	
	Up to two 105W Intel Xeon E5-2	2600 v3 family processors with 12 cores up to 2,8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,
Processor	4 cores up to 3 GHz. Two QPI lin	
	Up to 2133MHz memory speed.	
Managara DIMMa		r processor, 2 DIMMs per channel.
Memory DIMMs	RDIMM or LRDIMM (cannot be in	ntermixed), DDR4, 2133MHz
Memory capacity		GB (LRDIMM, 32GB x 16), 2nd CPU is needed
Memory protection	ECC, memory mirroring, lockstep	o, and memory sparing
RAID support	RAID 0, 1, 10 with embedded RA RAID 0, 1, 10 with RAID 500, PC optional key for RAID5/50. RAID 0, 1, 10, 5, 50, 6, 60 with R memory, optional CacheVault flas	AID 110i, 6Gb/s SATA, optional key for RAID5.
Diak driva hava	FastPath upgrade key	
Disk drive bays SD module	Up to 8 x 3.5" disk drive bays	to 0 antional CDLIC floor cords
2D IIIOdule	Optional SD module, supports up	
	3.5" SATA (7.2K 6Gbs HDD)	1TB/2TB/3TB/4TB/
	3.5" SAS (7.2K 6Gbs HDD)	1TB/2TB/3TB/4TB/
	2.5" SAS SSD (12Gbs)	200GB/400GB/800GB
nternal storage	2.5" SATA SSD (6Gbs)	120GB/240GB/300GB/480GB/600GB/800GB
	PCIe 2.0 x8 SSD adapter	1.6TB/3.2TB 8GB/32GB
	SDHC flash card	DHC flash card needs SDHC flash memory module.
	3. On 3.5" models, 2,5" drive comes with a 3	3.5" carrier.
Optical drive	Optional one UltraSlim optical dri	ve bay, supports DVD-ROM or DVD±RW
Tape drive bays	No internal tape bay	
Network interfaces	One dedicated management por Supports optional discrete netwo	t, two Gigabit Ethernet ports. rk adapters via PCIe slots
Coourity footures		word, Optional Trusted Platform Module (TCG
Security features	1.2-compliant). Optional chassis	
		anager (TSM), optional TSM Premium.
		graphics/management processor,
Systems	IPMI 2.0-compliant baseboard m	
management		atus of power, ID, network, system.
Ü		ent software: Diagnostics, Deployment Manager, er, Partner Pack for VMware vCenter and Microsoft
	System Center Operations Mana	
		60 W ac or 550 W ac or 750 W ac or 1100 W ac
Power supply	power supplies. 550 W and 1100 PLUS Platinum or Titanium quali	W are 80 PLUS Platinum qualified, 750 W is 80 fied, 450 W is 80 PLUS Gold qualified. 750 W
	Titanium is 200V - 240V, others a Microsoft Windows Server 2012	
Operating systems supported	Windows Small Business Server 2012, Windows Multipoint Server	42, 2012, and 2008 H2, 2011, Windows Server Storage 2012 R2 and 2012. Red Hat Enterprise Linux 7.0 and 6.5. I SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2
Rack kit	Optional slide or static rack kit on	
I IAUN NIL	1 or 3-year limited onsite service	
Base warranty		WILL SASTINGS.

Components	Specification											
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one VGA on rear. Maximum resolution: 1920x1200@60Hz											
Front ports	Two USB 2.0, one DisplayPort											
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)											
Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap										
Hot-swap parts	Disk drives, power supplies											
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels (Maximum configuration)											
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
	Temperature - non operating (no package)	-10 °C to 60 °C										
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
·	Humidity - operating	8%~90%, non-condensing										
	Humidity - storage (with package)	8%~90%, non-condensing										
Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)										
Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)										



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM

4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive

4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO

XF0G45865 SDHC Flash Assembly Module

1X70F28593 32GB SD Card

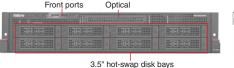
4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

												Chassis					
_			RAID	Disk		SD module/		Tape		Discrete			•				Base
Processor	2nd CPU	Memory	controller	bays	Disk drives	PCIe x8 SSD	Optical	drive	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x4GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	No	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	TPM	No	TSM		No	Slide	3-year
==		4 000		8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
1xVoon EE 2620 v2 90/	4YG0E28857	1x8GB	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
1xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	4XG0F28856	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
	1.6GHz/15MB/85W/1600MHz 1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz 1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz 1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz 1xXeon E5-2640 v3 8C/	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz 1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz 1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz 1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz 1xXeon E5-2640 v3 8C/ 4XG0F28856	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz 1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz 1xXeon E5-2620 v3 6C/ 1.9GHz/15MB/85W/1866MHz 1xXeon E5-2630 v3 8C/ 2.4GHz/15MB/85W/1866MHz 1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz 1xXeon E5-2640 v3 8C/ 2.4GHz/20MB/85W/1866MHz 1xXeon E5-2640 v3 8C/ 1x8GB 2133MHz RDIMM 1xXeon E5-2640 v3 8C/ 4XG0F28856 1x8GB	Name	Name	Name	No/No   Processor   2nd CPU   Memory   Controller   bays   Disk drives   PCle x8 SSD	No/No   DVD±RW   Processor   2nd CPU   Memory   Controller   bays   Disk drives   PCle x8 SSD   Optical	No No   Processor   2nd CPU   Memory   Controller   bays   Disk drives   PCle x8 SSD   Optical   drive	None   Processor   2nd CPU   Memory   Controller   bays   Disk drives   PCle x8 SSD   Optical   drive   Slots	Processor   2nd CPU   Memory   Controller   bays   Disk drives   PCle x8 SSD   Optical   drive   Slots   ethernet     1xXeon E5-2603 v3 6C/   1.6GHz/15MB/85W/1600MHz   4XG0F28860   2133MHz RDIMM   RAID110i   8x3.5"   Open   No/No   DVD±RW   None   No   No     1xXeon E5-2609 v3 6C/   1.9GHz/15MB/85W/1600MHz   4XG0F28859   2133MHz RDIMM   RAID110i   8x3.5"   Open   No/No   DVD±RW   None   2   No     1xXeon E5-2620 v3 6C/   4XG0F28858   2133MHz RDIMM   RAID110i   RAID11	No   Processor   Processor	Processor   2nd CPU   Memory   Controller   Disk bays   Disk drives   Disk drives	Processor   2nd CPU   Memory   Controller   Disk bays   Disk drives   Disk drives	Processor   2nd CPU   Memory   Memory	Processor   2nd CPU   Memory   Controller   Disk bays   Disk drives   Discrete   Controller   Disk bays   Disk drives   Discrete   Controller   Disk drives   Disk drives   Disk drives   Disk drives   Disk drives   Disk drives   Discrete   Discrete   Controller   Disk drives   Disk drives   Discrete   Discrete	Processor   2nd CPU   Memory   Memory   Controller   SD module/ bays   Disk drives   SD module/ PCle x8 SSD   Optical   Tape   Grive   Slots   Ethernet   TPM   Switch   System   Memory   System   Memory   Preloaded   Rack   Structure   Structur

2.6GH	z/20MB/90W/1866MHz	4X401 20000	2133MHz RDIMM	TIAIDTTO	HS	Ореп	
Components	Specification						
Form factor	2U rack						$\mathbb{I}_{c}$
	Up to two 105W Inte						
Processor	1.8 GHz, 10 cores up			6 GHz, 6 co	ores up	to 2.4 GHz,	
1 10003301	4 cores up to 3 GHz.						H
	Up to 2133MHz men	nory speed. l	Jp to 30MB cache	9			١.
Memory DIMMs	16 DIMM sockets. 4 of						1
,	RDIMM or LRDIMM					111:	ᆙ
Memory capacity	256GB (RDIMM, 160				2110 CP	O is needed	1
iviernory protection	ECC, memory mirror					for DAIDE	41
	RAID 0, 1, 10 with er RAID 0, 1, 10 with R					IOT HAIDS.	
	optional key for RAID		ie auaptei, odb/s	SAS/SAIF	١,		E
RAID support	RAID 0, 1, 10, 5, 50,		AID 710 PCIe ac	lanter 6Gh	)/s SAS	S/SATA 1GB	5
	memory, optional Ca						
	FastPath upgrade ke				,	.,.,	
Disk drive bays	Up to 8 x 3.5" disk dr	ive bays					1
SD module	Optional SD module,	supports up	to 2 optional SDI	HC flash ca	ards		1
	3.5" SATA (7.2K 6Gb	s HDD)	1TB/2TB/3TB/4	ГВ/			1-
	3.5" SAS (7.2K 6Gbs		1TB/2TB/3TB/4				L
	2.5" SAS SSD (12G)		200GB/400GB/8				Ш
Internal storage	2.5" SATA SSD (6Gb	os)	120GB/240GB/3	300GB/480	GB/600	0GB/800GB	Ш
	PCle 2.0 x8 SSD		1.6TB/3.2TB				
	SDHC flash card		8GB/32GB				-
	Note: 1. SAS drive needs S. 3. On 3.5" models, 2,5" drive	AS adapter. 2. SL e comes with a 3	)HC flash card needs 5 .5" carrier	SDHC flash me	mory mo	dule.	L
Optical drive	Optional one UltraSli	m optical driv	ve bay, supports [	OVD-ROM	or DVD	)±RW	E
Tape drive bays	No internal tape bay	•					3
Network interfaces	One dedicated mana	gement port	, two Gigabit Ethe	ernet ports.			S
inetwork interfaces	Supports optional dis						Š
Security features	Power-on and admin	istrator passv	word. Optional Tru	usted Platfo	orm Mo	dule (TCG	IS
Coounty locatoroo	1.2-compliant). Optio	nal chassis i	ntrusion switch		D		S
	Supports ThinkServe UEFI. Onboard Aspe	er System Ma	anager (15M), op	tional ISM	Premil	um.	S
	IPMI 2.0-compliant b						١
Systems	Control Panel LEDs	shows the sta	atus of power. ID.	network s	vstem.		0
management	Supports ThinkServe						4
	Energy Manager, Sys						t 4
	System Center Oper						4
	Up to two redundant	hot-swap 45	0 W ac or 550 W	ac or 750 \	N ac or	r 1100 W ac	4
Power supply	power supplies. 550						4
	PLUS Platinum or Tit			LUS Gold	qualifi	ed. 750 W	4
	Titanium is 200V - 24			NO DO			4
Operating eyeteme	Microsoft Windows S Windows Small Busi	nece Server	12, 2012, and 200 2011 Windows S	JO N∠, erver Stor	ado 30.	12 B2 and	4
supported	2012, Windows Multi	noint Server	2017, Willdows 3	nternrise I	inux 7 (	0 and 6.5	4
00,000	SUSE Linux Enterpri	se Server 11	SP3. VMware vS	Sphere (ES	Xi) 5.1	P5 and 5.5 U2	
Rack kit	Optional slide or stati			, ,=0			4
	1 or 3-year limited or						1
Base warranty	Some parts are Cust						

Components	Specification										
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolu	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz									
Front ports	Two USB 2.0, one DisplayPort										
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	15 (dedicated mgmt), two ethernet, one serial									
Cooling	4 (3+1, dual processors) or 3 (2+1)	1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies										
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels (Maximum configuration)										
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)									
	Temperature - non operating (no package)	-10 °C to 60 °C									
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C									
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)									
	Humidity - operating	8%~90%, non-condensing									
	Humidity - storage (with package)	8%~90%, non-condensing									
Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)									
Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)									





Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM

4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive 4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO 4XF0G45865 SDHC Flash Assembly Module

4X70F28593 32GB SD Card

4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter 4XF0G45867 ThinkServer System Manager Premium

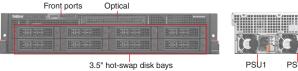
4X20F28576 750W Titanium Hot Swap Power Supply

Rear ports

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bavs	Disk drives	SD module/ PCle x8 SSD		Tape drive		Discrete ethernet		Chassis intrusion switch	System mamt	Power	Preloaded OS	Rack kit	Base wtv
70DC001HU	v. ==		1x8GB 2133MHz RDIMM		8x3.5" HS	Open		DVD±RW			No	ТРМ	No	TCM	550Wx1 Platinum	No	Slide	3-year
70DC001JUX	1vVoon EE 2660 v2 100/	4XG0E28854	1,000	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DC001KUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification	(
Form factor	2U rack	
	Up to two <b>105W Intel Xeon E5-2600 v3</b> family processors with 12 cores up to 1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F
Processor	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s.	F
	Up to 2133MHz memory speed. Up to 30MB cache	(
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	ŀ
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	١
Memory protection		Г
	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA,	E
RAID support	optional key for RAID5/50.    RAID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB	S
	memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or	
	FastPath upgrade key	
Disk drive bays	Up to 8 x 3.5" disk drive bays	٧
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	Г
	3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/	_
	3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/	
	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB	-1
Internal storage	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB	
Internal Storage	PCIe 2.0 x8 SSD 1.6TB/3.2TB	á
	SDHC flash card 8GB/32GB	
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	
Oution Labora	3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.	Е
Optical drive	Optional one Ultrasilm optical drive day, supports DVD-HOW or DVD±HW	U
Tape drive bays	No internal tape bay	S
Network interfaces	One dedicated management port, two Gigabit Ethernet ports.  Supports optional discrete network adapters via PCIe slots	S
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	S
		S
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	N
C	IPMI 2.0-compliant baseboard management controller (BMC).	
Systems	Control Panel LEDs shows the status of power, ID, network, system.	C
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4
	System Center Operations Manager, Power Planner	4
	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac	4
Power supply	power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80	4
i ower suppry	PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W	4
	Titanium is 200V - 240V, others are 110V - 240V	4
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,	4
Operating systems		4
supported	2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5.	4
		4
Rack kit	Optional slide or static rack kit on selected model	4
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.	
	Some parts are Customer Replaceable Units	

Components	Specification											
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one VGA on rear. Maximum resolution: 1920x1200@60Hz											
Front ports	Two USB 2.0, one DisplayPort											
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)											
Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap										
Hot-swap parts	Disk drives, power supplies											
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels (Maximum configuration)											
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
	Temperature - non operating (no package)	-10 °C to 60 °C										
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
·	Humidity - operating	8%~90%, non-condensing										
	Humidity - storage (with package)	8%~90%, non-condensing										
Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)										
Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)										



#### Expansion slots

Up to 6 PCIe 3.0 slots: one vertical onboard PCIe slot, up to 5 PCIe slots via two optional riser cards. Slot 1 (riser card 1): PCIe 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCIe 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM 4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive

4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO 4XF0G45865 SDHC Flash Assembly Module

4X70F28593 32GB SD Card

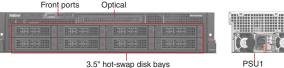
4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type-				RAID	Disk		M.2/SD			Discrete		Chassis intrusion	System	Preloaded		Base
model	Processor	2nd CPU	Memory	controller	Bays	Disk drives	module	Slots	Optical	ethernet	TPM	switch	mgmt	os	Power	wty
70DC002EU	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	2x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	2x1TB 3.5" SATA6Gbs 7.2K	No	2	DVD±RW	No	TPM	No	TSM Premium	No	750Wx2 Platinum	3-year

Components	Specification									
Form factor	2U rack									
Processor	Up to two <b>105W Intel Xeon E5-2600 v3</b> 1.8 GHz, 10 cores up to 2.6 GHz, 8 core	s up to 2.6 GHz, 6 cores up to 2.4 GHz,								
1 10000001	4 cores up to 3 GHz. Two QPI link up to 9 Up to 2133MHz memory speed. Up to 30	MB cache								
Memory DIMMs	16 DIMM sockets. 4 channels per proces RDIMM or LRDIMM (cannot be intermixed)	d), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LR	DIMM, 32GB x 16), 2nd CPU is needed								
Memory protection										
RAID support	RAID 0, 1, 10 with RAID 500, PCle adap optional key for RAID5/50. RAID 0, 1, 10, 5, 50, 6, 60 with RAID 710	AID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5. AID 0, 1, 10 with RAID 500, PCle adapter, 6Gb/s SAS/SATA, tional key for RAID5/50. AID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB emory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or								
Disk drive bays	Up to 8 x 3.5" disk drive bays									
SD module	Optional SD module, supports up to 2 op	tional SDHC flash cards								
	3.5" SATA (7.2K 6Gbs HDD) 1TB/2 3.5" SAS (7.2K 6Gbs HDD) 1TB/2	ГВ/3ТВ/4ТВ/ ГВ/3ТВ/4ТВ/								
Internal storage	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB									
	3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.	·								
Optical drive	Optional one UltraSlim optical drive bay,	supports DVD-ROM or DVD±RW								
Tape drive bays	No internal tape bay									
Network interfaces	One dedicated management port, two Gi Supports optional discrete network adapt	ers via PCIe slots								
Security features	Power-on and administrator password. O 1.2-compliant). Optional chassis intrusion	switch								
Systems management	System Center Operations Manager, Pov	cs/management processor, ent controller (BMC). power, ID, network, system. ware: Diagnostics, Deployment Manager, her Pack for VMware vCenter and Microsoft wer Planner								
Power supply	Up to two redundant hot-swap 450 W ac power supplies. 550 W and 1100 W are 8 PLUS Platinum or Titanium qualified, 450 Titanium is 200V - 240V, others are 110V	0 PLUS Platinum qualified, 750 W is 80 W is 80 PLUS Gold qualified. 750 W - 240V								
Operating systems supported	2012, Windows Multipoint Server 2012. F	/indows Server Storage 2012 R2 and								
Rack kit	Optional slide or static rack kit on selected									
Base warranty	1 or 3-year limited onsite service with 9x5 Some parts are Customer Replaceable L									

Components	Specification											
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear, Maximum resolution	6MB memory, one DisplayPort on front,										
Front ports	Two USB 2.0, one DisplayPort											
Rear ports		ne VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial										
Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap										
Hot-swap parts	Disk drives, power supplies											
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)										
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
	Temperature - non operating (no package)	-10 °C to 60 °C										
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
	Humidity - operating	8%~90%, non-condensing										
	Humidity - storage (with package)	8%~90%, non-condensing										
Weight	Minimum configuration: 16 kg (35	finimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)										
Dimensions	Height: 87 mm (3.4 in), width: 482	mm (19 in), depth: 764 mm (30 in)										





Up to 6 PCIe 3.0 slots: one vertical onboard PCIe slot, up to 5 PCIe slots via two optional riser cards. Slot 1 (riser card 1): PCIe 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCIe 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM 4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive

4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO

4XF0G45865 SDHC Flash Assembly Module

4X70F28593 32GB SD Card

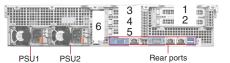
4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD		Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70DA000UUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x4GB 2133MHz RDIMM	110i +key	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	ТРМ	Switch	TSM Premium	550Wx2 Platinum	No	Slide	3-year
	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	510i +key	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	ТРМ	Switch	TSM Premium	550Wx2 Platinum	No	Slide	3-year
/ ()   ) \( \D () \( \D () \( \V	2xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	-	8x16GB 2133MHz RDIMM	720i +1GB RAM	8x2.5" HS	6x300GB 2.5" SAS6.0 10K HDD	No/No	DVD±RW	No	6	No	ТРМ	Switch	TSM Premium	550Wx2 Platinum	No	Slide	3-year

Components	Specification									
Form factor	2U rack		П							
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QP Up to 2133MHz memory spee									
Memory DIMMs	RDIMM or LRDIMM (cannot be	per processor, 2 DIMMs per channel. be intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/	GGB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	C, memory mirroring, lockstep, and memory sparing								
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	Supports AnyRAID 110i/510i/720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5"								
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of bays, or up to 24 x 2.5" (Bay 0	sinclude CacheVault, CacheCade Pro, and FastPath Irive bays, or up to 16 x 2.5" (Bay 0-15) disk drive 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards	$\neg$							
Internal storage	2.5" SATA (7.2K 6Gbs HDD)     500GB/1TB       2.5" SAS (10K 6Gbs HDD)     300GB/600GB/900GB/1.2TB       2.5" SAS (15K 6Gbs HDD)     146GB/300GB/450GB/600GB       2.5" SAS SSD (12Gbs)     200GB/400GB/800GB       2.5" SATA SSD (6Gbs)     120GB/240GB/300GB/480GB/600GB/800GB       Tape drive     2.5TB       PCIe 2.0 x8 SSD     1.6TB/3.2TB       SDHC flash card     8GB/32GB									
Optical drive	Note: SAS drive needs SAS adapter.  Optional one UltraSlim optical supports DVD-ROM or DVD±	drive bay on 8 and 16 x 2.5" bays model, RW	٦							
Tape drive bays	Supports up to one LTO-6 into AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.								
Network interfaces	Supports optional discrete ne									
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch								
Systems management	upports ThinkServer System Manager (TSM), optional TSM Premium.  IEFI. Onboard Aspeed AST2400 graphics/management processor,  IEFI. Onboard Aspeed AST2400 graphics/management processor,  IEFI. Onboard Aspeed AST2400 graphics/management processor,  IEFI. Ontroller (BMC).  ICONTROLLEDs shows the status of power, ID, network, system.  ICONTROLLEDs shows the status of power, ID, network, system.  ICONTROLLEDS STATE MANAGER, Partner Pack for VMware vCenter and Microsoft system Center Operations Manager, Power Planner									
Power supply	Up to two redundant hot-swap power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0 450 W ac or 550 W ac or 750 W ac or 1100 W ac 00 W are 80 PLUS Platinum qualified, 750 W is 80 ualified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"								

Components	Specification										
Operating systems supported	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windows Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2									
Rack kit	Optional slide or static rack kit on s	otional slide or static rack kit on selected model									
Base warranty	Some parts are Customer Replace	or 3-year limited onsite service with 9x5/NBD. Ome parts are Customer Replaceable Units									
Graphics		nboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, e VGA on rear. Maximum resolution: 1920x1200@60Hz									
Front ports	Two USB 2.0, one DisplayPort										
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)										
Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies										
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)									
	Temperature - non operating (no package)	-10 °C to 60 °C									
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C									
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)									
{  ·	Humidity - operating	8%~90%, non-condensing									
	Humidity - storage (with package)	umidity - storage (with package) 8%~90%, non-condensing									
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)										
Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)									



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type-					Disk		SD module/	1	Таре		Discrete		Chassis intrusion	•	l _	Preloaded		
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	PCIe x8 SSD	Optical	drive	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
70DA000XUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x4GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	No	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DA000YUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DA0010UX	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DA0011UX	1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz	4XG0F28857	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification									
Form factor	2U rack									
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec									
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	per processor, 2 DIMMs per channel. e intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/	GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	step, and memory sparing								
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5"  10i. 6Gb/s SATA, optional key for RAID 5.  10i. 6Gb/s SAS/SATA, optional key for RAID 5/50.  h AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs  720ix must have a cache.  1GB read-only memory. 1GB/2GB/4GB flash with  include CacheVault, CacheCade Pro, and FastPath								
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of	Irive bays, or up to 16 x 2.5" (Bay 0-15) disk drive 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe 2.0 x8 SSD SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHO flash card needs SDHC flash memory module.								
Optical drive	supports DVD-ROM or DVD±I									
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.								
Network interfaces	Supports optional discrete net									
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch								
Systems management	UEFI. Onboard Aspeed AST2 IPMI 2.0-compliant baseboarc Control Panel LEDs shows the Supports ThinkServer manag Energy Manager, System Mar	2-compliant). Optional chassis intrusion switch pports ThinkServer System Manager (TSM), optional TSM Premium. EFI. Onboard Aspeed AST2400 graphics/management processor, MI 2.0-compliant baseboard management controller (BMC). Introl Panel LEDs shows the status of power, ID, network, system. pports ThinkServer management software: Diagnostics, Deployment Manager, ergy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft stem Center Operations Manager, Power Planner								
Power supply	power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0.450 W ac or 550 W ac or 750 W ac or 1100 W ac 00 W are 80 PLUS Platinum qualified, 750 W is 80 Luslified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"								

	Components	Specification										
	Operating systems supported	Business Server 2011, Windows S Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windows Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2									
	Rack kit	tional slide or static rack kit on selected model										
	Base warranty	1 or 3-year limited onsite service some parts are Customer Replace	eable Units									
7	Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolu	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz									
┨	Front ports	Two USB 2.0, one DisplayPort										
	Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)									
	Cooling	4 (3+1, dual processors) or 3 (2+1)	1, single processor) fans, non-hot swap									
s	Hot-swap parts	Disk drives, power supplies										
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 B	Bels (Maximum configuration)									
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)									
$\dashv$		Temperature - non operating (no package)	-10 °C to 60 °C									
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C									
┨	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)									
$\dashv$		Humidity - operating	8%~90%, non-condensing									
		Humidity - storage (with package)	8%~90%, non-condensing									
	Weight	finimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)										
	Dimensions		mm (19 in), depth: 764 mm (30 in)									
	Front norte		· · · · · · · · · · · · · · · · · · ·									



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
	1xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	4XG0F28856	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No		550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2660 v3 10C/ 2.6GHz/25MB/105W/2133MHz	4XG0F28854	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No		550Wx1 Platinum	No	Slide	3-year
70DA0014UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	No	No	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification									
Form factor	2U rack									
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec									
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	per processor, 2 DIMMs per channel. e intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/	GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	step, and memory sparing								
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5"  10i. 6Gb/s SATA, optional key for RAID 5.  10i. 6Gb/s SAS/SATA, optional key for RAID 5/50.  h AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs  720ix must have a cache.  1GB read-only memory. 1GB/2GB/4GB flash with  include CacheVault, CacheCade Pro, and FastPath								
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of	Irive bays, or up to 16 x 2.5" (Bay 0-15) disk drive 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe 2.0 x8 SSD SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHO flash card needs SDHC flash memory module.								
Optical drive	supports DVD-ROM or DVD±I									
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.								
Network interfaces	Supports optional discrete net									
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch								
Systems management	UEFI. Onboard Aspeed AST2 IPMI 2.0-compliant baseboarc Control Panel LEDs shows the Supports ThinkServer manag Energy Manager, System Mar	2-compliant). Optional chassis intrusion switch pports ThinkServer System Manager (TSM), optional TSM Premium. EFI. Onboard Aspeed AST2400 graphics/management processor, MI 2.0-compliant baseboard management controller (BMC). Introl Panel LEDs shows the status of power, ID, network, system. pports ThinkServer management software: Diagnostics, Deployment Manager, ergy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft stem Center Operations Manager, Power Planner								
Power supply	power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0.450 W ac or 550 W ac or 750 W ac or 1100 W ac 00 W are 80 PLUS Platinum qualified, 750 W is 80 Luslified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"								

	Components	Specification											
	Operating systems supported	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windows Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2										
	Rack kit	Optional slide or static rack kit on s	tional slide or static rack kit on selected model or 3-year limited onsite service with 9x5/NBD. me parts are Customer Replaceable Units										
	Base warranty	Some parts are Customer Replace											
-	Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolution	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz										
┨	Front ports	Two USB 2.0, one DisplayPort											
	Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)										
	Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap										
3	Hot-swap parts	Disk drives, power supplies											
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)										
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
$\exists$		Temperature - non operating (no package)	-10 °C to 60 °C										
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
┨	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
$\dashv$		Humidity - operating	8%~90%, non-condensing										
		Humidity - storage (with package)	8%~90%, non-condensing										
	Weight	linimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)											
	Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)										



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

## Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70DV0008UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x4GB 2133MHz RDIMM	720ix +1GB RAM	16x2.5" HS	Open	No/No	No	None	No	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2620 v3 +6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	720ix +1GB RAM	16x2.5" HS	Open	No/No	No	None	2	No	ТРМ	No	TSM	750Wx1 Platinum	No	Slide	3-year
Ι/()Ι)\/()()()ΔΙΙΧ	1vYoon F5-26/0 v3 ±8C/	4YG0E28856	1v8GB	720ix +1GB RAM	16x2.5" HS	Open	No/No	No	None	2	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year

Components	Specification									
Form factor	2U rack									
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec									
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	6 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  DIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/	512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	step, and memory sparing								
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	1GB read-only memory. 1GB/2GB/4GB flash with								
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 8 x 2.5" (Bay 0-7) disk drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive bays, or up to 24 x 2.5" (Bay 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe 2.0 x8 SSD SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHO flash card needs SDHC flash memory module.								
Optical drive	supports DVD-ROM or DVD±I									
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.								
Network interfaces	Supports optional discrete net									
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch								
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner									
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 450 W is supported on 8 x 2.5" models only									

	Components	Specification										
	Operating systems supported	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windows Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2									
	Rack kit	Optional slide or static rack kit on s	selected model									
	Base warranty	1 or 3-year limited onsite service Some parts are Customer Replace	ceable Units									
-	Graphics		nboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, ne VGA on rear. Maximum resolution: 1920x1200@60Hz									
┨	Front ports	Two USB 2.0, one DisplayPort										
	Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)										
	Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap									
3	Hot-swap parts	Disk drives, power supplies										
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)									
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)									
$\exists$		Temperature - non operating (no package)	-10 °C to 60 °C									
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C									
┨	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)									
$\dashv$		Humidity - operating	8%~90%, non-condensing									
		Humidity - storage (with package)	8%~90%, non-condensing									
	Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)									
	Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)									



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD		Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
	1xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	4XG0F28855	1x16GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No/No	None	None	2	No	TPM	Switch	TSM Premium	750Wx1 Platinum	No	Slide	3-year
70DE000CUX	2xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	-	8x16GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	8x300GB 2.5" SAS6.0 10K HDD	1x32GB/No	None	None	6	No	TPM	Switch	TSM Premium	750Wx2 Platinum		Slide	3-year

Components	Specification									
Form factor	2U rack									
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec									
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	6 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  DIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/	512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	step, and memory sparing								
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	1GB read-only memory. 1GB/2GB/4GB flash with								
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 8 x 2.5" (Bay 0-7) disk drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive bays, or up to 24 x 2.5" (Bay 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe 2.0 x8 SSD SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHO flash card needs SDHC flash memory module.								
Optical drive	supports DVD-ROM or DVD±I									
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.								
Network interfaces	Supports optional discrete net									
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch								
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner									
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 450 W is supported on 8 x 2.5" models only									

	Components	Specification											
	Operating systems	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Window Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2											
	Rack kit	Optional slide or static rack kit on s	selected model										
	Base warranty	1 or 3-year limited onsite service some parts are Customer Replace	eable Units										
-	Graphics		nboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, ne VGA on rear. Maximum resolution: 1920x1200@60Hz										
٦	Front ports	Two USB 2.0, one DisplayPort											
	Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one seri (9-pin)											
	Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap										
s	Hot-swap parts	Disk drives, power supplies											
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels	Bels (Maximum configuration)										
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
$\dashv$		Temperature - non operating (no package)	-10 °C to 60 °C										
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
$\dashv$	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
$\dashv$		Humidity - operating	8%~90%, non-condensing										
		Humidity - storage (with package)	8%~90%, non-condensing										
	Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)										
	Dimensions	Height: 87 mm (3.4 in), width: 482	? mm (19 in), depth: 764 mm (30 in)										
- 1													



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70DE000HUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x4GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No/No	None	None	No	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year
$1/(11)$ $\vdash$ $(100)$ $111$ $1$	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No/No	None	None	2	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year
I/ODEOOOKITY	1vYoon E5-26/0 v3 8C/	4YG0E28856	1v8GR		24x2.5" HS	Open	No/No	None	None	2	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year

Components	Specification									
Form factor	2U rack									
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec									
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	6 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  DIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/	512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	step, and memory sparing								
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	1GB read-only memory. 1GB/2GB/4GB flash with								
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 8 x 2.5" (Bay 0-7) disk drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive bays, or up to 24 x 2.5" (Bay 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe 2.0 x8 SSD SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHO flash card needs SDHC flash memory module.								
Optical drive	supports DVD-ROM or DVD±I									
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.								
Network interfaces	Supports optional discrete net									
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch								
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner									
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 450 W is supported on 8 x 2.5" models only									

	Components	Specification											
	Operating systems supported	Business Server 2011, Windows S Multipoint Server 2012. Red Hat E	Aicrosoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Windows Server Storage 2012 R2 and 2012, Windows Multipoint Server 2012. Red Hat Enterprise Linux 7.0 and 6.5. SUSE Linux Enterprise Server 11 SP3. VMware vSphere (ESXi) 5.1 P5 and 5.5 U2										
	Rack kit	Optional slide or static rack kit on s	selected model										
	Base warranty	Some parts are Customer Replac	or 3-year limited onsite service with 9x5/NBD. ome parts are Customer Replaceable Units										
7	Graphics		Inboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, ne VGA on rear. Maximum resolution: 1920x1200@60Hz										
١	Front ports	Two USB 2.0, one DisplayPort											
	Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)											
	Cooling	4 (3+1, dual processors) or 3 (2+1	1, single processor) fans, non-hot swap										
3	Hot-swap parts	Disk drives, power supplies											
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 B	Bels (Maximum configuration)										
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)										
$\dashv$		Temperature - non operating (no package)	-10 °C to 60 °C										
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C										
$\dashv$	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)										
$\dashv$		Humidity - operating	8%~90%, non-condensing										
		Humidity - storage (with package)	8%~90%, non-condensing										
	Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)										
	Dimensions		mm (19 in), depth: 764 mm (30 in)										
		· · · · · · · · · · · · · · · · · · ·											



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO 4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

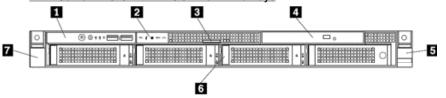
4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

### ThinkServer RD340 Overview

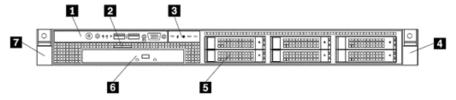
Front view - ThinkServer RD340 supports the following disk bay configurations:

ThinkServer RD340 with 4 x 3.5" Disk Drive Bays



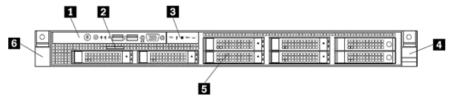
- 1. Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDs
  - System error LED
  - 2 USB 2.0
- Intelligent Diagnostics Module (IDM basic only, optional)
   Pull-out information card
- Slim optical drive (optional)
- Rack handle (right)
- 4 x 3.5" hot-swap disk drive bays
- 7. Rack handle (left)

ThinkServer RD340 with 6 x 2.5" Disk Drive Bays



- 1. Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDs
  - System error LED
  - 2 USB 2.0
  - 1 VGA
- Pull-out information card
   Intelligent Diagnostics Module (IDM basic only, optional)
- Rack handle (right)
- 5. 6 x 2.5" hot-swap disk drive bays
- Slim optical drive (optional)
- 7. Rack handle (left)

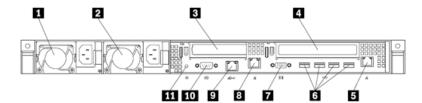
ThinkServer RD340 with 8 x 2.5" Disk Drive Bays



- 1. Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDs
  - System error LED 2 USB 2.0

  - 1 VGA
- 2. Pull-out information card
- Intelligent Diagnostics Module (IDM basic only, optional)
- 4. Rack handle (right)
- 5. 8 x 2.5" hot-swap disk drive bays
- 6. Rack handle (left)

Rear view



- 1. Hot-swap redundant power supply 2 (optional)
- Hot-swap redundant power supply 1
- Low profile PCI Express slot by riser card 2
- PCI Express slot by riser card 1
- Ethernet 2 (RJ-45)
- 6. Four USB 2.0
- VGA DB-15 connector
- Ethernet 1 (RJ-45)
- Dedicate/share management connector (RJ-45)
- 10 Serial
- 11 ID LED

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet					TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB0004US	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	2nd	8GBx12 1600MHz LVRDIMM	4X3.5" HS	RAID710 +CacheVault +CacheCade	2x400GB SSD(RAID1,cache) +2x500GB 3.5" SATA(RAID0)	DVD±RW	350T2	No	iKVM	Cable	1	TPM	2012 Standard	3
70AB0005UX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	4GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0006UX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	4GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0008UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	4GBx2 1600MHz LVRDIMM	4X3.5" HS	RAID300 +upgrade	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB0009UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	4GBx4 1600MHz LVRDIMM	4X3.5" HS	RAID700 +Battery	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB001TUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001UUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		J (varith r	aak band	loo)	Cable mgmt (o	. / .		ole management arm on selected models					
Mechanical	• 482.4mm W x 7	734mm D	x 43.6m	nm H (witl		Power supply	80 PL	US Go	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies					
Chipset	Intel C606 Chips				or processors	Security feature (TPM is optional	es Powe	r-on pa	assword/administrator password, form Module (TCG 1.2-compliant)					
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	• Ene	ergy Sta	ar Server 2.0 qualified					
Memory protection	ECC, memory m	irroring, n	nemory	sparing			·							
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top			Front: Supports the following disk bay configurations: 4 x 3.5"					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power supply	eo   output  o					
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	d 1 7d 2	ddns	ddns	6 x 2.5"					
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		ý 1	ly 2	© coptical disk disk disk disk					
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	CPU1 Memory sockets	Memory sockets	_	8 x 2.5"    e					
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	none o	ptical ba	y, optiona	ports one optional slim optical al external USB optical is needed	fan fan fan disks and o	fan far ptical* are		PSU PSU					
Onboard network	Two Gigabit Ethe				dedicate/share management	* Slim optical bay on 8 x 2.5" mode	is not availa	able						
Discrete network (optional)	1Gbps: 350-T2	/I350-T4			options on selected models: per Module for X520-DA2	Expansion Slo	ots:		Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).					
Intelligent Diagnostics Module (optional)	Supports optiona IDM basic LED li	al Intellige ghts indic	nt Diagn ate failin	ostics Mo	odule (IDM) basic, nent category	Slot 1: half-leng	gth, full-h	neight,	PCIe 3.0 x16 2 USB 2.0					
Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks	liant base Server Ma LEDs sho Grid Mana	board in nageme ws the sager	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single x8 elec for dual p	processor i	model,	1 RJ-45 (dedicate/share mgmt), 1 VGA					
Cooling fans	6 fans, non-hot s	wap, 5 +	1 redunc	dant										

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB001VUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001WUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001XUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001YUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0020UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0021UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0022UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	• 1U rack with rai		I (swith #	aali baad	loo)	Cable mgmt (opt) Optional cable management arm on selected models								
Mechanical	• 19" W x 28.9" D • 482.4mm W x 7 • 17kg (37.5 lb) v	734mm D	x 43.6m	nm H (witl		Power supply  One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies								
Chipset	Intel C606 Chipse	•			or processors	Security features   Power-on password/administrator password, _(TPM is optional)   Trusted Platform Module (TCG 1.2-compliant)								
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant								
Memory protection	ECC, memory mi	irroring, n	nemory s	sparing			- 1101	10 0011	•					
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top			Front: Supports the following disk bay configurations: 4 x 3.5"					
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power	eo   optical  disk disk disk disk					
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	card 1	ddns ,	supply	6 x 2.5"					
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		ly 1	ly 2	© optical disk disk disk disk					
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	CPU1 Sockets	Memory sockets		8 x 2.5"    e					
Optical drive (optional)	8 x 2.5":	none o	ptical ba	y, optiona	ports one optional slim optical al external USB optical is needed	fan fan fan disks and o	fan far ptical* are		PSU PSU   2-PCie x8   1-PCie x16   PSU   P					
Onboard network	Two Gigabit Ethe one Gigabit Ethe				dedicate/share management	* Slim optical bay on 8 x 2.5" mode	is not availa	able						
Discrete network (optional)	1Gbps: 350-T2/	/I350-T4			options on selected models: per Module for X520-DA2	Expansion SI  Riser card 1 fo	ots:		Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).					
Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	<u>ate failin</u>	ng compo	nent category	Slot 1: half-len Slot 2: Low Pro	gth, full-h	neight,	PCle 3.0 x16 2 USB 2.0					
Systems management (iKVM is optional)	IPMI 2.0-compl optional ThinkS	liant base Server Ma LEDs sho Grid Mana	board mageme mageme ws the s	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single x8 elec for dual p	processor i	model,	1 RJ-45 (dedicate/share mgmt), 1 VGA					
Cooling fans	6 fans, non-hot s	wap, 5 +	1 redund	dant										
San footpoton for more	1 - 4 - 111 1 - <b>4</b> 41				·				© Longuo					

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB0023UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0024UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID700	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0025UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID700	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0026UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0027UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0028UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB0029UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" D</li> </ul>	⊔ /with r	aak band	lloo)	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	• 482.4mm W x 7 • 17kg (37.5 lb) v	x 43.6m	nm H (wit	h rack handles)	Power supply  One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies							
Chipset						Security features   Power-on password/administrator password, _(TPM is optional)   Trusted Platform Module (TCG 1.2-compliant)						
Memory DIMMs	MMs Twelve DIMM sockets, six DIMM sockets per processor					Environmental • Energy Star Server 2.0 qualified • RoHS-compliant						
Memory protection	ECC, memory mirroring, memory sparing						110110 00	F ···				
	RAID adapter	RAID support	Cache	Transfer rates	r Optional upgrades	Top		Front: Supports the following disk bay configurations: 4 x 3.5"				
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply Power supply	eo				
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	d 1	ddns .	6 x 2.5"				
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		у <sub>1</sub>	© Optical disk disk disk optical disk disk disk				
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	C C PU sockets	CP C	8 x 2.5"  o o o o o o o o o o o o o o o o o o o				
	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": one optical bay, optional external USB optical is needed					fan fan fan fan fan fan Fan fan fan Gan fan Gan Gan Gan Gan Gan Gan Gan Gan Gan G						
Onboard network	Two Gigabit Ethe one Gigabit Ethe	by Intel 8	l i350, 82574L, d	dedicate/share management	* Slim optical bay is not available on 8 x 2.5" models							
Discrete network (optional)	1Gbps: 350-T2/			options on selected models: per Module for X520-DA2	Expansion Slot	s:	Front/rear Ports: card 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).					
Intelligent Diagnostics Module (optional)	IDM basic LED li	ate failin	ng compo		Riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCle 3.0 x16 Slot 2: Low Profile, PCle 3.0 x8** Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45),							
Systems management (iKVM is optional)	IPMI 2.0-comp optional ThinkS	liant base Server Ma LEDs sho Grid Mana	board magements ws the sager	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions power, ID, network, system asyUpdate	**x4 elec for single processor model, 1 RJ-45 (dedicate/share mgmt), 1 VGA						
Cooling fans	s 6 fans, non-hot swap, 5 + 1 redundant											

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AB002AUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	4X3.5" HS	RAID300 +upgrade	4x1TB 3.5" SATA	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3
70AB002BUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	4X3.5" HS	RAID500 +upgrade	4x1TB 3.5" SAS	DVD±RW	350T4	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		⊔ (with r	ack band	loc)	Cable mgmt (o	. / .		ole management arm on selected models
Mechanical	• 482.4mm W x 7 • 17kg (37.5 lb) v	734mm D	x 43.6m	m H (witl		Power supply	80 F	PLUS Go	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies
Chipset	Intel C606 Chips				or processors	Security feature (TPM is option)	es Pow	er-on pa	assword/administrator password, form Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM so	ockets pe	er processor	Environmental certifications	• Er	nergy Sta	ar Server 2.0 qualified
Memory protection	ECC, memory m	irroring, n	nemory s	sparing			, U	0110-0011	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top	$\overline{}$	$\overline{}$	<b>Front:</b> Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Powe	Powe	e∘ □□ ···· optical disk   disk   disk
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 1	Power supply	Power supply	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB		optional intelligent Battery Backup Unit (iBBU08)		1	y 2	© O D C C C C C C C C C C C C C C C C C C
C.my	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	CPU1 Sockets	Memory sockets	PU2	8 x 2.5"  Output  Outp
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	: one sli	m optica ptical ba	l bay, sup y, optiona	oports one optional slim optical al external USB optical is needed	fan fan fan disks and o		fan fan	Rear         2-PClex8         1-PClex16           PSU         100         <
	Two Gigabit Ethe one Gigabit Ethe				dedicate/share management	* Slim optical bay	is not ava		
(ontional)	1Gbps: 350-T2	/I350-T4		'	options on selected models: per Module for X520-DA2	Expansion SI  Riser card 1 fo	ots:	ricor oo	Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).
Intelligent Diagnostics Module (optional)	<u>IDM basic LED li</u>	ights indic	ate failin	g compo	odule (IDM) basic, nent category	Slot 1: half-len Slot 2: Low Pro	ath. full	heiaht.	PCle 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks	lliant base Server Ma LEDs sho Grid Mana	board mageme ws the sager	anagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single x8 elec for dual p	processo	r model,	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot s					<u> </u>			

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage		l I	Intelligent Diagnostics			l .		Preloaded OS	Base warranty (-year, on-site)
70AC0000US	Xeon E5-2430L v2 6C/2.4GHz/15MB/1600MHz	2nd	16GBx12 1600MHz LVRDIMM	6X2.5" HS	RAID710 +CacheVault +FastPath	4x400GB SSD(RAID6) +2x400GB SSD(RAID0)	DVD±RW	350T2	No	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	• 1U rack with rai			U \	Cable mgmt (op	ot) Optiona	ll cable management arm on selected models
Mechanical	• 19" W x 28.9" D • 482.4mm W x 7 • 17kg (37.5 lb) w	'34mm D x `43	.6mm H (wit		Power supply	80 PLU	two 550 watts standard, two maximum, rear access, hot-swap, S Gold qualified, redundant with two power supplies
Chipset	Intel C606 Chipse			or processors	Security feature (TPM is optiona	es Power-dal) Trusted	on password/administrator password, Platform Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM soc	ckets, six DIM	/I sockets pe	er processor	Environmental certifications	Energ	y Star Server 2.0 qualified -compliant
Memory protection	ECC, memory mi	rroring, memo	ry sparing			* none	
	RAID adapter	RAID car	he Transfer	Optional upgrades	Top		Front: Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10	6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power Glock I disk I disk   di
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10	6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 2	ddns	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	MB 6Gb/s	optional intelligent Battery Backup Unit (iBBU08)			optical disk disk disk
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	B 6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	Memory sockets	CPU2 Sockets	8 x 2.5"    e
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	none optica	bay, option	oports one optional slim optical al external USB optical is needed	fan fan fan disks and op	fan fan otical* area	
Onboard network	Two Gigabit Ethe one Gigabit Ether			dedicate/share management	* Slim optical bay is on 8 x 2.5" model	is not available	
Discrete network (optional)	1Gbps: 350-T2/ 10Gbps: X520-SI	1350-T4		options on selected models: ber Module for X520-DA2	Expansion Slo	ots:	Front/rear Ports: er card 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models),
Intelligent Diagnostics Module (optional)	IDM basic LED lig	ghts indicate f	ailing compo			gth, full-hei	ght, PCle 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	IPMI 2.0-compl optional ThinkS	liant baseboar Server Manage EDs shows th Brid Manager	d managem ment Modu e status of p	nagement processor, ent controller (BMC); le Premium for iKVM functions power, ID, network, system asyUpdate	**x4 elec for single p	processor mo	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot sv	wap, 5 + 1 red	undant				
0 (	databasi ad bafa was atlaw						

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	16GBx12 1600MHz LVRDIMM	8X2.5" HS	RAID500 +upgrade	8x900GB 2.5" SAS(RAID50)	N/A	X540T2	No	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	1U rack with rail kit     19" W x 28.9" D x 1.72" H (with rack handles)	Cable mgmt (opt) Optional cable management arm on selected models
Mechanical	19 W X 28.9 D X 1.72 H (with rack nandles)     482.4mm W x 734mm D x 43.6mm H (with rack handles)     17kg (37.5 lb) when fully configured	Power supply  One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant
Memory protection	ECC, memory mirroring, memory sparing	
	RAID adapter RAID support Cache Transfer rates Optional upgrades	Front: Supports the following disk bay configurations:  4 x 3.5"
	RAID 300 (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Hiser card 1 2 5 5 6 x 2.5 5 6 x 2.5 5 5 6 x 2.
RAID support*	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backup Unit (iBBU08)	optical disk disk disk
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	CPU1 SOM CPU1 CPU2 S 2.5"    Som CPU2   Som
Optical drive (optional)	4 x 3.5"/6 x 2.5" : one slim optical bay, supports one optional slim optical 8 x 2.5": one optical bay, optional external USB optical is needed	fan fan fan fan fan fan Fear  disks and optical* area  PSU PSU  1-PCle x16  D D D D D D
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	*Slim optical bay is not available on 8 x 2.5" models
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Expansion Slots:  Riser card 1 for slot 1, riser card 2 for slot 2  Front/rear Ports:  Front/rear Ports:  Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models),
Intelligent Diagnostics Module (optional)	IDM basic LED lights indicate failing component category	Slot 1: half-length, full-height, PCle 3.0 x16 Slot 2: Low Profile, PCle 3.0 x8**  2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45),
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate	**x4 elec for single processor model, 1 RJ-45 (dedicate/share mgmt), 1 VGA x8 elec for dual processors model
Cooling fans	6 fans, non-hot swap, 5 + 1 redundant	
San fontanton for more of	1 1 2 1 2 6 1 2	© Langua

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70A90000US	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	2nd	8GBx8 (lockstep) 1600MHz LVRDIMM	6X2.5 HS	RAID700 +Battery	6x400GB SSD(RAID50)	No	X540T2	No	iKVM	Cable	1	TPM	2012 Standard	1
70A90001UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	6X2.5 HS	RAID700	6x1TB 2.5 SATA	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3
70A90002UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	6X2.5 HS	RAID700 +Battery	6x300GB 2.5 SAS	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

19° W x 28.9° D x 1.72° H (with rack handles)		• 1U rack with ra					Cable mgmt (opt)	Optional	cable management arm on selected models
Security features   Secu	Mechanical	• 482.4mm W x 7	734mm D	x 43.6m	ım H (witl	les) h rack handles)	Power supply	One or tw 80 PLUS	vo 550 watts standard, two maximum, rear access, hot-swap, Gold qualified, redundant with two power supplies
Memory DIMMs   Twelve DIMM sockets, six DIMM sockets, per processor   Environmental certifications   ECC, memory mirroring, memory sparing   ECC, memory management   ECC, memory mirroring, memory sparing   ECC, memory management   ECC, memory mirroring, memory sparing   ECC, memory management   ECC, management   ECC, memory management   ECC, memory management   ECC, memory management   ECC, memory management   ECC, management   ECC, management   ECC, memory management   ECC, memory management   ECC, management   ECC, memory management	Chipset					or processors	Security features (TPM is optional)	Power-on Trusted P	password/administrator password, Platform Module (TCG 1.2-compliant)
RAID support   RAID 300	Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental	<ul> <li>Energy</li> </ul>	Star Server 2.0 qualified
RAID support* RAID 300	Memory protection	ECC, memory m	irroring, n	nemory s	sparing			P HOLIS-C	
RAID Support*  RAID Support add RAID 5 support RAID 5 supp		RAID adapter		Cache		Optional upgrades			7 7 0
Front/rear Ports:   Fron					6Gb/s	add RAID 5 support	liser ca	Powe	e∘□□ ···· optical  □ disk □ disk □ disk □
RAID 700 (LSI 9260-8i) 6, 60  RAID 710 (LSI 9270CV-8i) 5, 50, 6, 60  Optical drive (optional)  Onboard network (optional)  Onboard network (optional)  Discrete network (optional)  Discrete network (optional)  Discrete network (optional)  Onboard Aspeed AST2300 graphics/management management (module (not))  Discrete network (optional)  Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management processor, IPMI 2.0-compliant baseboard management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional Save Pass (PMC) for supports and processor model  PAID 700 (LSI 9260-8i) 6, 60  On 10	RAID support*		0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ırd 2	r supp	6 x 2.5"
Poptical drive (LSI 9270CV-8i) 6, 60 1GB 6Gb/s optional CacheVault (CV) flash cache with super capacitor optional dacheCade Pro 2.0 optional FastPath key  Optical drive (optional) 8 x 2.5": one slim optical bay, supports one optional sim optical sax 2.5": one slim optical bay, optional cacheCade Pro 2.0 optional FastPath key  Onboard network (optional) Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (optional) Supports the following Intel Server Adapter options on selected models: 10Gbps: 350-T2/i350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2 (IDM basic, IDM basic LED lights indicate failing component category optional ThinkServer Management management management (IKVM is optional) Plane LEDs shows the status of power, ID, network, system enanagement (IKVM is optional) Plane LEDs shows the status of power, ID, network, system 1 thinkServer EasyStartup/EasyManage/EasyUpdate  **optional CacheCade Pro 2.0 ** **optional CacheCade Pro 2.0 ** **optional SaptPath key  **Pour Image Carter Ima	* RAID 50, 60 are supported on 8 x 2.5" disk bay models only		5, 50,	512MB	6Gb/s	optional intelligent Battery Backup		Ý 1 2	optical disk disk disk
Optical drive (optional)  A x 3.5"/6 x 2.5": one slim optical bay, supports one optional slim optical 8 x 2.5": one optical bay, optional external USB optical is needed Onboard network Onboard network Discrete network (optional)  Discrete network (			5, 50,	1GB	6Gb/s	flash cache with super capacitor optional CacheCade Pro 2.0	Memory sockets	CPU2 Memory sockets	e
Onboard network Onboard network Onboard network Onboard network Optional Discrete network (optional) Discrete network Discrete network (optional) Discrete network Discrete network  Expansion Stots  Expansion Stots  Front/rear Ports: Pice road 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, pCle 3.0 x8*  Front/rear Ports: Pice road 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, pCle 3.0 x8*  ***x4 elec for dual processors mode	Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	one sli	m optica ptical ba	l bay, sup ly, optiona	oports one optional slim optical al external USB optical is needed			2 - PCle x8 1 - PCle x16
Discrete network (optional)  Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2  Intelligent Diagnostics  Module (optional)  Supports optional Intelligent Diagnostics Module (IDM) basic, IDM basic LED lights indicate failing component category  Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions  Control Panel LEDs shows the status of power, ID, network, system  Lenovo SmartGrid Manager  ThinkServer EasyStartup/EasyManage/EasyUpdate  ThinkServer EasyStartup/EasyManage/EasyUpdate  Front/rear Ports:  Supports optional 1, riser card 2 for slot 1, riser card 2 for slot 1 (For slot 1, riser card 2 for slot 2 (For slot 1) (For slot	Onboard network					dedicate/share management	<b>]</b>		
Intelligent Diagnostics    Supports optional Intelligent Diagnostics Module (IDM) basic,   IDM basic LED lights indicate failing component category   Systems	Discrete network (optional)	1Gbps: 350-T2	/I350-T4		'	'	Expansion Slots	s:	
• Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions (iKVM is optional)  • Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions • Control Panel LEDs shows the status of power, ID, network, system • Lenovo SmartGrid Manager • ThinkServer EasyStartup/EasyManage/EasyUpdate  1 RJ-45 (dedicate/share mgmt), 1 VGA  **XA elec for single processor model, **8 elec for dual processors model ** **A elec for dual processor model ** ** ** ** ** ** ** ** ** ** ** ** **	Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	ate failin	ig compo	nent category	Slot 1: half-length	n. full-heial	ht. PCIe 3.0 x16 2 USB 2.0
Cooling fans 6 fans, non-hot swap, 5 + 1 redundant	Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks • Control Panel I • Lenovo Smart(	liant base Server Ma LEDs sho Grid Mana	eboard mageme ws the sager	nanagement Modul tatus of p	ent controller (BMC); e Premium for iKVM functions lower, ID, network, system	**x4 elec for single pro	ocessor mode	1 RJ-45 (dedicate/share mgmt), 1 VGA
	Cooling fans	6 fans, non-hot s	wap, 5 +	1 redund	lant				

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AA0000US	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	2nd	16GBx12 1600MHz LVRDIMM	8X2.5 HS	RAID700	4x300GB 2.5" SAS(RAID6) +4x400GB SSD(RAID5)	N/A	X520SR2	No	iKVM	Cable	1	TPM	2012 Standard	3
70AA0001UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	8X2.5 HS	RAID710 +CacheVault	6x600GB 2.5 SAS	N/A	X540T2	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		I /with w	aali baad	loo)	Cable mgmt (o	pt) Option	onal ca	ble management arm on selected models
Mechanical	• 482.4mm W x 7	734mm D	x 43.6m	nm H (witl		Power supply	80 P	LUS G	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies
Chipset	Intel C606 Chips				or processors	Security featur	es Powe	er-on p	assword/administrator password, tform Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	• En	ergy S	tar Server 2.0 qualified
Memory protection	ECC, memory m	irroring, n	nemory s	sparing			y no	113-001	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top		$\Box$	Front: Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power supply	e contical disk disk disk
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 2	ddns ,	ddns ,	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB		optional intelligent Battery Backup Unit (iBBU08)		ý 1	y 2	optical disk disk disk
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	Memory sockets	Memory sockets		8 x 2.5"
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	none o	ptical ba	y, optiona	ports one optional slim optical al external USB optical is needed	fan fan fan disks and d		n fan ⊖a	Rear           PSU PSU         2-PCie x8         11-PCie x16           DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
Onboard network	Two Gigabit Ethe				dedicate/share management	* Slim optical bay on 8 x 2.5" mod	iș not avaii	lable	
Discrete network (optional)	1Gbps: 350-T2 10Gbps: X520-S	/I350-T4 3R2/X520-	·DA2/X5	40-T2/Fib	options on selected models: per Module for X520-DA2	Expansion SI  Riser card 1 for	ots:		Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).
Intelligent Diagnostics Module (optional)	Supports optiona IDM basic LED li	al Intellige ights indic	nt Diagn ate failin	ostics Mo	odule (IDM) basic, nent category	Slot 1: half-len	gth, full-	height,	PCle 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	<ul> <li>Onboard Aspe IPMI 2.0-comp optional Thinks</li> </ul>	ed AST23 liant base Server Ma LEDs sho Grid Mana	300 grap board mageme ws the sager	hics/man nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions lower, ID, network, system	**x4 elec for single x8 elec for dual p	processor	model,	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot s								
0 6					<u> </u>				

ThinkServer RD3	40 Platform	System	ıs Spe	cifica	tions - I of II									
Components	Specifications													
Mechanical	<ul> <li>1U rack with rai</li> <li>19" W x 28.9" E</li> <li>482.4mm W x 7</li> <li>17kg (37.5 lb) v</li> </ul>	) x 1.72" H '34mm D x vhen fully c	43.6mm	ı H (with	s) rack handles)									
Chipset	Intel C606 Chips													
Processors	up to 8 cores (E5- up to 20MB (E5-2 integrated 3-char	i-2400 serio 2400 series nnel DDR3	es)/10 cc s)/25MB memory	res (E5- (E5-2400 controlle	ocessors from Intel <b>Xeon E5-240</b> 2400 v2 series), one QPI links up 0 v2 series) cache, er up to 1600MHz	<b>0</b> or <b>Xeon E5-2400 v2</b> families, to 8.0GT/s,								
Memory type	* By default, the voltag	e of LV RDIMN	1 is 1.5V an	id can be ch	processor, 240-pin panged to 1.35V in BIOS setting									
Memory DIMMs	Twelve DIMM so	ckets, six D	IMM soc	kets per	processor									
Memory protection		ECC, memory mirroring, memory sparing												
Disk bays configurations	<ul> <li>4 x 3.5" disk ba</li> <li>6 x 2.5" disk ba</li> </ul>	Supports one of the following configurations 2.4 x 3.5" disk bays + 1 x slim optical bay 2.6 x 2.5" disk bays + 1 x slim optical bay 2.8 x 2.5" disk bays												
	RAID adapter RAID support** Cache rates Optional upgrades													
	RAID 300 (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support optional upgrade key.													
RAID support*	(LSI 9240-8i) RAID 700	0, 1, 10	540MD	6Gb/s	add RAID 5, 50 support optional intelligent Battery									
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	(LSI 9260-8i)	5, 50, 6, 60	512MB	6Gb/s	Backup Unit (iBBU08)									
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key									
Optical drive (optional)	4 x 3.5"/6 x 2.5" r 8 x 2.5" models:				y, supports one optional slim opti ptional external USB optical is ne									
Onboard network	Two Gigabit Ethe one Gigabit Ethe	rnet ports	oy Intel ion	350, 2574L, de	edicate/share management									
Front ports	One analog VGA	DB-15 cor	nector (1	for 6 x 2.	5"/8 x 2.5" models), two USB 2.0									
Rear ports	Four USB 2.0, or one RJ-45 (dedic				t (RJ-45), g VGA DB-15 connector									
Expansion Slots	Two PCI-Express	s slots via t	No riser o		2 cert 1 for slot 1 riser card 2 for	1 or slot 2								
	Two PCI-Express slots via two riser cards, riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec for single processor model, x8 elec for dual processors model)													
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz													
ntelligent Diagnostics Module (optional)	Supports optiona IDM basic LED li	ghts indica	te failing	compon	ent category									
Systems management (iKVM is optional)	optional ThinkS	erver Mana anel LEDs s arid Manag	agement shows the er	Module e status	Premium for iKVM functions of power, ID, network, system	liant baseboard management controller (BMC);								
Cooling fans	6 fans, non-hot s													
Cable mgmt (opt)	Optional cable m	anagemen	t arm on	selected	models									

# ThinkServer RD340 Platform Systems Specifications - II of II

Components	Specifications									
Power supply		tandard, two maximum, rear acc , redundant with two power supp								
Hot-swap parts	Disk drives, power supp	olies, and cooling fans								
Security features (TPM is optional)	Power-on password/adi	ministrator password/Trusted Pla	tform Module (TCG 1.2-compliant)							
	Environmental certifications	<ul> <li>Energy Star Server 2.0 qual</li> <li>RoHS-compliant</li> </ul>	ified							
	EMC	FCC Class A, CSA, CE								
	240VA	Supports								
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	)							
	Temperature - non operating (no package)	-10 °C to 60 °C								
	Temperature - non operating (with package)	-40 °C to 70 °C								
	Altitude - operating	Supported Altitude (unpressurize	zed): 0-10000ft (0-3048m)							
	Humidity - operating	8%~80%, non-condensing								
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing								
	Humidity - non operating (with package)	8%~90%, non-condensing								
			System	Configuration						
		Category	Entry level	High-end						
		CPU	1	2						
		Memory	4GB x 1	4GB x 12						
	A	Optical Drive	Slim optical	Slim optical						
	Acoustic noise (idle/working mode)	Drive Bays	4 x 3.5"	6 x 2.5"						
	(Idio, Working Inode)	RAID	RAID500	RAID500						
		HDD	2 x 500GB 3.5" SATA	6 x 300GB 2.5" SAS						
		PSU	550Wx1	550Wx2						
		Sound Pressure (operating)	45.28 dB(A)	44.74 dB(A)						
		Sound Pressure (idle)	45.28 dB(A)	44.95 dB(A)						

# ThinkServer RD340 Optional Configurations - Processor and Memory

Rack kit	Included in models													
Processor	The following processor options are available:													
					Processors	Specifi	cations*			Part				
	Processor Number		# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Number				
	Intel Xeon E5-2400 v2 Series													
	Xeon E5-2440 v2	8	16	1.9 GHz	2.4 GHz	20MB	7.2 GT/s	95W	DDR3-1600	0C19539				
	Xeon E5-2450 v2	8	16	2.5 GHz	3.3 GHz	20MB	8 GT/s	95W	DDR3-1600	0C19538				
	Xeon E5-2450L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	60W	DDR3-1600	0C19544				
	Xeon E5-2470 v2	10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19537				
	Xeon E5-2407 v2	4	4	2.4 GHz	2.4 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19542				
	Xeon E5-2420 v2	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19541				
	Xeon E5-2430 v2	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19540				
	Xeon E5-2430L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60W	DDR3-1600	0C19545				
	Xeon E5-2403 v2	4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19543				
	Intel Xeon E5-2400	Serie	es											
	Xeon E5-2450L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89450				
	Xeon E5-2450	8	16	2.1 GHz	2.9 GHz	20MB	8 GT/s	95 W	DDR3-1600					
	Xeon E5-2440	6	12	2.4 GHz	2.9 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89445				
	Xeon E5-2430L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89451				
	Xeon E5-2407	4	4	2.2 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89448				
	Xeon E5-2403	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89449				
	Xeon E5-2430	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89446				
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89447				
	Xeon E5-2470	8	16	2.3 GHz	3.1 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89443				
	Notes: All processors specifica The information herein Intel may update this ir	is prov	ided "as-is	".	,	0	•		l.com/					
			Men	nory option	ns			Part Numb						
Memory options	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195	33					
	ThinkServer 8GB D	DR3L	-1600MH	z (2RX8) F	RDIMM			0C195	34					
	ThinkServer 16GB	DDR3	L-1600MF	Hz (2RX4)	RDIMM			0C195	35					
				, ,										

# ThinkServer RD340 Optional Configurations - Storage and RAID

	Hot-swap disk drive options for 3.5" bay	Part Number
	3.5" SATA Hard Drive	, arrivariber
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89473
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89474
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89475
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89477
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19520
<b>5</b>	3.5" SAS Hard Drive	70.100=0
Disk drive options for 3.5" disk bay models		0C19530
(8 x 3.5"/12 x 3.5")	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19531
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19532
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	67Y2616
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive	4XB0F28644
	2.5" SSD for 3.5" disk bay	
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit	0C19571
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit	0C19572
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit	0C19573
	Hot-swap disk drive options for 2.5" bay	Part Number
	2.5" SATA Hard Drive	T dit it diribor
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19495
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19496
	2.5" SAS Hard Drive	
isk drive options	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2619
r 2.5" disk bay models	i i	67Y2621
3 x 2.5"/16 x 2.5")	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive	0A89409
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494
	2.5" SSD	•
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive	0A89420
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive	0A89418
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive	0A89419
	RAID controller and RAID upgrade options	Part Number
	ThinkServer RAID 300 Upgrade Key for Advanced RAID	0A89422
	ThinkServer RAID 500 Adapter II	0A89464
	ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407
NAID and an	ThinkServer RAID 700 Adapter II	0A89463
AID options	ThinkServer RAID 700 Battery	67Y2647
•		2012122
·	ThinkServer RAID 710 Adapter	0C19489
·	ThinkServer RAID 710 Adapter ThinkServer RAID Super Capacitor Module	0C19489 0C19490
·	-	

# ThinkServer RD340 Optional Configurations - Network, System Management, Power Supply

		<u> </u>
	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
letwork and HBA	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
ptions	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by Qlogic	0C19482
acurity antions	Trusted Platform Module options	Part Number
ecurity options	ThinkServer Trusted Platform Module	0A89428
	System Management option for iKVM	Part Number
stems management	ThinkServer Management Module Premium	67Y2624
otions	Cable Management option	Part Number
	ThinkServer Cable management Arm	0A89476
ower events entions	Power supply option	Part Number
ower supply options	ThinkServer 550W Gold Hot Swap Redundant Power Supply	4X20E54689

### ThinkServer RD340 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer RD340

3,7,00				
Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows Server 2008 x86 Edi	tion		Lasyotartap	
Windows Server 2008 Standard Edition (x86)	LIOTI		•	
Windows Server 2008 Enterprise Edition (x86)			•	+
Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (xoo)  Windows Server 2008 x64 Edi	tion			
Windows Server 2008 Standard Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Standard Edition (x64) (including Hyper-V)  Windows Server 2008 Enterprise Edition (x64) (including Hyper-V)	•		•	-
	•		•	
Windows Server 2008 Datacenter Edition (x64) (including Hyper-V) Windows Server 2008 R2 (x64) w	:4h CD4		•	
	•	•		
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V)				-
Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Small Business Server	2011	I	T	
Windows Small Business Server 2011 Essentials	•		•	-
Windows Small Business Server 2011 Standard	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 2012	1	T		
Windows Server 2012 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 2012 Hyper-V	•		•	
Windows Server 2012 R2				
Windows Server 2012 R2 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Essentials	•	•	•	•
Windows Server 2012 R2 Hyper-V	•		•	
SUSE Linux Enterprise Server	x86			
SUSE Linux Enterprise Server 10 sp4			•	
SUSE Linux Enterprise Server 11 sp2	•		•	
SUSE Linux Enterprise Server 11 sp3	•		•	
SUSE Linux Enterprise Server	x64			
SUSE Linux Enterprise Server 10 sp4			•	
SUSE Linux Enterprise Server 11 sp2	•		•	
RedHat Enterprise Linux Server (RI	HEL) x86	<u>'</u>	<u>'</u>	
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
RedHat Enterprise Linux Serve	r x64			
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
Vmware x64				
Vmware ESXi 5.1 U1			•	•
Vmware ESXi 5.5	•	•	•	•
Microsoft Hyper V	1			
Microsoft Hyper-V server 2008	•		•	
Microsoft Hyper-v server 2008 R2 SP1	•		•	
Citrix		I		
Citrix XenServer 6.1	•		•	
Citrix XenServer 6.0.2	•		•	
Note:		1		

Note:

• For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html

For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer\_OS\_&\_Virtualization\_Options\_Datasheet.pdf

### **ThinkServer RD340 Services Upgrade Options**

Partial list of Lenovo Services for ThinkServer RD340 models with 3-year onsite base warranty

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Upgrade Service Description	Part Number
	rait Nullibei
Warranty 3YR Onsite 24x7x4 Hour Response	EMCOL1E4E0
3YR Onsite 24x7x4 Hour Response	5WS0F15458
	5WS0F15392
3YR Onsite 9x5x4 Hour Response	5WS0F15355
4YR Onsite 24x7x4 Hour Response	5WS0F15443
4YR Onsite 24x7x8 Hour Response	5WS0F15395
4YR Onsite 9x5x4 Hour Response	5WS0F15394
4YR Onsite NBD	5WS0F15415
5YR Onsite 24x7x4 Hour Response	5WS0F15377
5YR Onsite 24x7x8 Hour Response	5WS0F15440
5YR Onsite 9x5x4 Hour Response 5YR Onsite NBD	5WS0F15430
Keep Your Drive (KYD) Service	5WS0F15419
	EDC0E1E400
3YR Keep Your Drive	5PS0F15436
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456
4YR Onsite NBD + KYD	5PS0F15459
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366
5YR Onsite NBD + KYD	5PS0F15391
Priority Technical Support  3YR KYD + Priority Support	5PS0F15417
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15444
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468
3YR Priority Support	5WS0F15466 5WS0E76471
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15433
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351
4YR Onsite NBD + KYD + Priority Support	5PS0F15373
4YR Onsite NBD + Priority Support	5WS0F15401
4YR Priority Support	5WS0E77170
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350
5YR Onsite 24x7x4 Hour Response + RYD + Priority Support	5WS0F15350
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15471
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382
5YR Onsite NBD + KYD + Priority Support	5PS0F15388
5YR Onsite NBD + Priority Support	5WS0F15366
5YR Priority Support	5WS0E77173
orn Filority Support	34430E11113

r	Upgrade Service Description	Part Number							
	Post Warranty								
8	1YR Onsite 24x7x4 Hour Response	5WS0F15435							
<u>2</u> 5	1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370							
	1YR Onsite 24x7x8 Hour Response	5WS0F15427							
3	1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361							
5	1YR Onsite 9x5x4 Hour Response	5WS0F15416							
4	1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348							
5 7	1YR Onsite NBD	5WS0F15407							
	1YR Onsite NBD + Priority Support	5WS0F15465							
0	TopSeller Priority (TopSeller models only)								
0	3YR Onsite 24x7x4 Hour Response	5WS0D73789							
9	3YR Onsite 9x5x4 Hour Response	5WS0D73787							
	4YR Onsite 24x7x4 Hour Response	5WS0D73792							
6	4YR Onsite 9x5x4 Hour Response	5WS0D73791							
6	4YR Onsite NBD	5WS0F15470							
9	3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414							
8	3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423							
9	3YR Priority Support	5WS0E76457							
9	4YR Priority Support	5WS0E76482							
6		·							

#### Note:

#### 24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

#### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

# 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation) • 24 hours a day, 7 days a week, including nights and weekends

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

#### Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

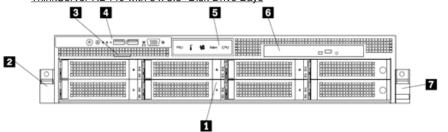
#### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced. To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

### ThinkServer RD440 Overview

#### Front view - ThinkServer RD440 supports the following disk bay configurations:





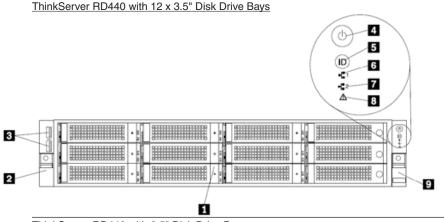
- 8 x 3.5" hot-swap disk drive bays
- Rack handle (left)
- Pull-out information card 3.
- Front panel
- Power Button with LED
- ID button with LED
- 2 Network interface status LEDs

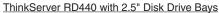
5. Intelligent Diagnostics Module

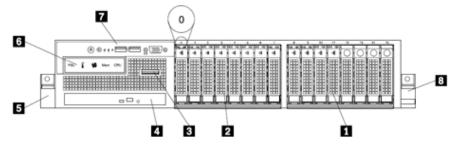
6. Slim optical drive (optional)
7. Rack handle (right)

(optional)

- System error LED
- 2 USB 2.0
- 1 VGA
- 12 x 3.5" hot-swap disk drive bays Rack handle (left) 2.
- 3. 2 USB 2.0
- Power Button with LED
- ID button with LED
- Network interface status LED 1
- Network interface status LED 2
- System error LED
- Rack handle (right)



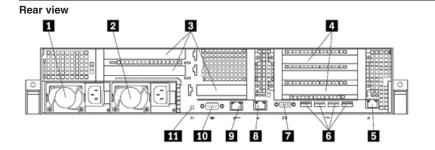




- 1. 8 x hot-swap disk drive bays (for 16x2.5" hard drive bays model) 8 x Hot-swap disk drive bays Pull-out information card

- Slim optical drive (optional)
- Rack handle (left)
- Intelligent Diagnostics Module (basic or premium, optional)
- Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDsSystem error LED

  - 2 USB 2.0
  - 1 VGA
- 8. Rack handle (right)



- Hot-swap redundant power supply 2 (optional) Hot-swap redundant power supply 1 Three PCI Express slots by riser card 2

- Two PCI Express slots by riser card 1 Ethernet 2 (RJ-45)
- 5.
- Four USB 2.0 6.
- 7. VGA DB-15 connector
- Ethernet 1 (RJ-45)
- Dedicate/share management connector (RJ-45)
- 10. Serial
- 11. ID LED

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AH001QUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001RUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001SUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001TUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001UUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001VUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001WUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	<ul><li>2U rack with rail kit</li><li>19" W x 28.9" D x 3.45" H (with rack handles)</li></ul>	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies							
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models							
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified certifications • RoHS-compliant							
Memory protection	ECC, memory mirroring, memory sparing								
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"							
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Power supply  Po							
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"							
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Bac Unit (iBBU08)	cup							
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capaci optional CacheCade Pro 2.0 • optional FastPath key	or							
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay							
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one optical bay, external USB optical is neede	disks and optical* area							
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models Fee State							
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCle x8							
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Front/rear Ports:  Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0  Rear: 4 USB 2.0, 1 serial (9-pin),							
Systems management (iKVM is optional)	<ul> <li>Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions</li> <li>Control Panel LEDs shows the status of power, ID, network, system</li> <li>Lenovo SmartGrid Manager</li> <li>ThinkServer EasyStartup/EasyManage/EasyUpdate</li> </ul>	Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCle 3.0 x8 (x4 elec) Slot 6: half-length, full-height, PCle 3.0 x8							
Cooling fans	5 fans, hot swap, 4 + 1 redundant								

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AH001XUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID700	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001YUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID700	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0020UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID710	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0021UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID710	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	8X3.5" HS	RAID700	8x2TB 3.5" SAS	DVD±RW	350T2	IDM Premium	iKVM	No	1	TPM	No	3
70AH0023UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	8X3.5" HS	RAID710 +CacheVault	6x4TB 3.5" SATA	DVD±RW	350T4	IDM Premium	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	• 2U rack with rail kit	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	<ul> <li>19" W x 28.9" D x 3.45" H (with rack handles)</li> <li>482.4mm W x 734mm D x 87.6mm H (with rack handles)</li> <li>26.5 kg (58.42 lb) when fully configured</li> </ul>	Power supply One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies							
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models							
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant							
Memory protection	ECC, memory mirroring, memory sparing	Top Front: Supports the following disk bay configurations:							
	RAID adapter RAID support Cache Transfer rates Optional upgrades	Training and the same and the s							
RAID support	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Cal Ca Ca Werl							
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"							
	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backup Unit (iBBU08)								
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	CPU1     Man   CPU2   Man   C							
Optical drive (optional)	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only  8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": none optical bay, external USB optical is needed	disks and optical* area    Disk Bay   Disk Bay   9-16   9-16							
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  Rear  5 - PCle x16							
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6-PCle x8 2-PCle x8 4-PCle x8 3-PCle x8							
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Expansion Slots:  Front/rear Ports:  Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0  2 USB 2.0  Rear: 4 USB 2.0, 1 serial (9-pin),							
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate	Slot 2: half-length, full-height, PCIe 3.0 x8  Slot 3: half-length, full-height, PCIe 2.0 x8 (x4)  Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec)  Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Slot 6: half-length, full-height, PCIe 3.0 x8							
Cooling fans	5 fans, hot swap, 4 + 1 redundant								

# ThinkServer RD440 (70AE) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AE0000US	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	2nd	16GBx12 1600MHz LVRDIMM	8X3.5" HS	RAID700	8x500GB 3.5" SATA(RAID60)	DVD±RW	X520DA2 +X540T2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	<ul> <li>2U rack with rail kit</li> <li>19" W x 28.9" D x 3.45" H (with rack handles)</li> </ul>	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies							
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models							
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental  - certifications  - RoHS-compliant							
Memory protection	ECC, memory mirroring, memory sparing	F T T T T T T T T T T T T T T T T T T T							
	RAID adapter RAID support Cache Transfer rates Optional upgrades  RAID 300* 0, 1, 10 6Gb/s optional upgrade key,	<u>₽</u> ₽ ₽ 2 8 x 3.5"							
	(nboard) and HAID 5 support optional upgrade key, add RAID 5, 50 support	Power supply Disk Bay 1-8    Ser   Ser   Ser   Ser   Power supply   Power supply   Disk Bay 1-8							
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backup Unit (iBBU08)								
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor • optional CacheCade Pro 2.0 • optional FastPath key	CPU1   Reg   CPU2   Reg   CPU							
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay							
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one optical bay, external USB optical is needed	disks and optical* area optical optical							
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  Rear  5 - PCle x16							
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCle x8 2 - PCle x8 3 - PCle x8 9 - PC							
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Expansion Slots:  Front/rear Ports:  Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0  Rear: 4 USB 2.0, 1 serial (9-pin),							
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate	Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8							
Cooling fans	5 fans, hot swap, 4 + 1 redundant								

# ThinkServer RD440 (70AF) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage		Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AF0000US	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	2nd	16GBx6 1600MHz LVRDIMM	12X3.5" HS	RAID700	6x500GB 3.5" SATA(RAID60) +6x1TB 3.5" SATA(RAID10)	X520DA2	N/A	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	2U rack with rail kit     19" W x 28.9" D x 3.45" H (with rack handles)	Cable mgmt (opt) Optional cable management arm on selected models				
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified				
Memory protection	ECC, memory mirroring, memory sparing	,				
	RAID adapter RAID support Cache Transfer rates Optional upgrades	Top Front: Supports the following disk bay configurations:  8 x 3.5"  □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □				
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Riser cand 2 Power supply Power supply Disk Bay 1-8				
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"				
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Back Unit (iBBU08)	up				
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacit • optional CacheCade Pro 2.0 • optional FastPath key	8 x 2.5"/16 x 2.5" (Bay 9-16 are available on 16 x 2.5" models)				
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay				
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one optical bay, external USB optical is needed	disks and optical* area				
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  Rear  5 - PCle x16				
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCle x8 2 - PCle x8 3 - PCle x8 9 - PC				
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Rear: 4 USB 2.0, 1 serial (9-pin),				
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Control Panel LEDs shows the status of power, ID, network, system Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate	Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8				
Cooling fans	5 fans, hot swap, 4 + 1 redundant					

# ThinkServer RD440 (70AG) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics	1				Preloaded OS	Base warranty (-year, on-site)
70AG0000US	E5-2440 6C/2.4GHz/15MB/1333MHz	2nd	8GBx6+16GBx6 1600MHz LVRDIMM	8X2.5" HS	RAID500	8x600GB 2.5" SAS(RAID50)	DVD±RW	X540T2 +X520DA2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	2U rack with rail kit	Cable mgmt (opt) Optional cable management arm on selected models				
Mechanical	• 19" W x 28.9" D x 3.45" H (with rack handles)	One or two 800 watts standard, two maximum, rear access, hot-swap,				
Mechanical	• 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured	80 PLUS Gold qualified, redundant with two power supplies				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant				
Memory protection	ECC, memory mirroring, memory sparing	The state of the s				
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"				
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	8 x 3.5"  Power supply  Power				
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"				
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	CPU1   CPU1   CPU2				
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay				
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5":	disks and optical* area				
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  **Fear*  5 - PCle x16   T - PCle x16				
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCIe x8 2 - PCIe x8 3 - PCIe x8 PSU				
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Expansion Slots: Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0  2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin),				
Systems management (iKVM is optional)	<ul> <li>Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions</li> <li>Control Panel LEDs shows the status of power, ID, network, system</li> <li>Lenovo SmartGrid Manager</li> <li>ThinkServer EasyStartup/EasyManage/EasyUpdate</li> </ul>	Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x8 Slot 6: half-length, full-height, PCle 3.0 x8				
Cooling fans	5 fans, hot swap, 4 + 1 redundant					

# ThinkServer RD440 (70B2) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70B20000US	Xeon E5-2450L v2 10C/1.7GHz/25MB/1600MHz	2nd	4GBx6+16GBx6 1600MHz LVRDIMM	16X2.5" HS	RAID700 +Battery	12x900GB 2.5" SAS(RAID10) +4x1TB 2.5" SATA(RAID1)	DVD±RW	X520DA2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	• 2U rack with rail kit	Cable mgmt (opt) Optional cable management arm on selected models				
Mechanical	<ul> <li>19" W x 28.9" D x 3.45" H (with rack handles)</li> <li>482.4mm W x 734mm D x 87.6mm H (with rack handles)</li> <li>26.5 kg (58.42 lb) when fully configured</li> </ul>	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies				
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models				
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental  - Energy Star Server 2.0 qualified  - certifications  - RoHS-compliant				
Memory protection	ECC, memory mirroring, memory sparing	The state of the s				
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"				
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	8 x 3.5"  Power supply  Power				
RAID support	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"				
	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backup Unit (iBBU08)					
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	CPU1   CPU2				
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay				
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5":	disks and optical* area				
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  **Fear*  5 - PCle x16*  1 - PCle x16*				
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCIe x8				
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8				
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate					
Cooling fans	5 fans, hot swap, 4 + 1 redundant					

# ThinkServer RD440 Platform Systems Specifications - I of II

Components	Specifications								
	• 2U rack with rail kit								
Mechanical	<ul> <li>19" W x 28.9" D x 3.45" H (with rack handles)</li> <li>482.4mm W x 734mm D x 87.6mm H (with rack handles)</li> </ul>								
	28 kg (61.73 lb) when fully configured								
Chipset	ttel C606 Chipset								
	Two LGA1356 sockets, supports up to two processors from Intel <b>Xeon E5-2400</b> or <b>Xeon E5-2400 v2</b> families,								
Processors	up to 8 cores (E5-2400 series)/10 cores (E5-2400 v2 series), one QPI links up to 8.0GT/s,								
	o to 20MB (E5-2400 series)/25MB (E5-2400 v2 series) cache, segrated 3-channel DDR3 memory controller up to 1600MHz								
Memory type	1600MHz, LV RDIMM*, DDR3, 3-channel per processor, 240-pin								
, ,,	* By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting								
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor								
Memory capacity Memory protection	Up to 192GB DDR3 LV RDIMM (16GB x 12)								
wemory protection	ECC, memory mirroring, memory sparing Supports one of the following configurations:								
B: 1.1	• 8 x 3.5" disk bays + 1 x slim optical bay								
Disk bays configurations	• 12 x 3.5" disk bays								
Configurations	8 x 2.5" disk bays + 1 x slim optical bay  10 x 9.5" disk bays + 1 x slim optical bay  11 x 15								
	• 16 x 2.5" disk bays + 1 x slim optical bay								
	RAID adapter RAID Support Cache Transfer rates Optional upgrades								
	RAID 300**								
	(onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support								
	RAID 500 O, 1, 10 6Gb/s optional upgrade key,								
	(LSI 9240-8I) add HAID 5, 50 support								
DAID ournort	RAID 700 0, 1, 10, 5, 50, 512MB 6Gb/s Optional intelligent Battery								
RAID support	(LSI 9260-8i) 5, 50, 6, 60 Sackup Unit (iBBU08)								
	• optional CacheVault (CV)								
	RAID 710 0, 1, 10, 10D colv flash cache with								
	(LSI 9270CV-8i) 5, 50, 1GB 6Gb/s super capacitor optional CacheCade Pro 2.0								
	• optional FastPath key								
Optical drive	** RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only  8 x 3.5"/8 x 2.5"/16 x 2.5" models: one slim optical bay, supports one optional slim optical								
(optional)	12 x 3.5" models: none optical bay, optional external USB optical is needed								
Onboard network	Two Gigabit Ethernet ports by Intel i350,								
Official differences	one Gigabit Ethernet port by Intel 82574L, dedicate/share management								
Front ports	One analog VGA DB-15 connector (for 8 x 3.5", 8 x 2.5", and 16 x 2.5" models), two USB 2.0								
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector								
-	one no-45 (dedicate/share mgmt), one analog vox bb-15 connector								
	BRESSERS   5 ( 5555555555   1200   100000000000000000000000000000								
Expansion Slots	[ [ [ [ 27] ] 25] G[ 28] [ 27] G[ 28]								
	Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6								
	Slot 1: half-length, full-height, PCle 3.0 x16 (x8 elec)								
	Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4)								
	Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec)								
	Slot 5-6 are available on dual processors models:								
	Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec)								
	Slot 6: half-length, full-height, PCle 3.0 x8  Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear								
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;  Maximum resolution: 1920x1200@60Hz								
Ĺ									

### ThinkServer RD440 Platform Systems Specifications - II of II

Components	Specifications									
Intelligent Diagnostics Module (optional)	IDM basic LED lights in IDM Premium LED ligh	dicate failing component categor ts indicate individual failing part								
Systems management (iKVM is optional)	optional ThinkServer • Front control panel LE • Lenovo SmartGrid Ma • ThinkServer EasySta	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Front control panel LEDs shows the status of power, ID, network, system Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate								
Security features (TPM is optional)	Power-on password/ad	Power-on password/administrator password/Trusted Platform Module (TCG 1.2-compliant)								
Cooling fans	5 fans, hot-swap, 4 + 1	redundant								
Cable mgmt (opt)	Optional cable manage	ment arm on selected models								
Power supply	One or two 800 watts s 80 PLUS Gold qualified	tandard, two maximum, rear acc I, redundant with two power supp	ess, hot-swap, blies							
Hot-swap parts	Disk drives, power sup	r supplies, and cooling fans								
	Environmental certifications	Energy Star Server 2.0 qual     RoHS-compliant	ified							
	EMC	FCC Class A, CSA, CE								
	240VA	Supports								
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	)							
	Temperature - non operating (no package)	-10 °C to 60 °C								
	Temperature - non operating (with package)	-40 °C to 70 °C								
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~80%, non-condensing								
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing								
	Humidity - non operating (with package)	8%~90%, non-condensing								
			System	Configuration						
		Category	Entry level	High-end						
		CPU	1	2						
		Memory	4GB x 1	4GB x 12						
	A	Optical Drive	Slim optical	None						
	Acoustic noise (idle/working mode)	Drive Bays	8 x 3.5"	12 x 3.5"						
	(lale/working mode)	RAID	RAID500	RAID500						
		HDD	2 x 500GB 3.5" SATA	12 x 2TB 3.5" SAS						
		PSU	800Wx1	800Wx2						
		Sound Pressure (operating)	44.98 dB(A)	44.2 dB(A)						
		Sound Pressure (idle)	44.5 dB(A)	44.7 dB(A)						

# ThinkServer RD440 Optional Configurations - Processor and Memory

Rack kit	Included in models										
Processor	The following proces	ssor op	otions are	available:							
					Processors	Specifi	cations*			Dort	
	Processor Number		# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Part Number	
	Intel Xeon E5-2400 v2 Series										
	Xeon E5-2440 v2	8	16	1.9 GHz	2.4 GHz	20MB	7.2 GT/s	95W	DDR3-1600	0C19539	
	Xeon E5-2450 v2	8	16	2.5 GHz	3.3 GHz	20MB	8 GT/s	95W	DDR3-1600	0C19538	
	Xeon E5-2450L v2	10	20	1.7 GHz	2.1 GHz		7.2 GT/s	60W	DDR3-1600	0C19544	
	Xeon E5-2470 v2	10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19537	
	Xeon E5-2407 v2	4	4	2.4 GHz	2.4 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19542	
	Xeon E5-2420 v2	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19541	
	Xeon E5-2430 v2	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19540	
	Xeon E5-2430L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60W	DDR3-1600	0C19545	
	Xeon E5-2403 v2	4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19543	
	Intel Xeon E5-2400	) Serie	es					1			
	Xeon E5-2450L	8	16	1.8 GHz		20MB	8 GT/s	70 W	DDR3-1600		
	Xeon E5-2450	8	16	2.1 GHz	2.9 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89444	
	Xeon E5-2440	6	12	2.4 GHz	2.9 GHz	15MB	7.2 GT/s	95 W	DDR3-1333		
	Xeon E5-2430L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89451	
	Xeon E5-2407	4	4	2.2 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89448	
	Xeon E5-2403	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89449	
	Xeon E5-2430	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89446	
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89447	
	Xeon E5-2470	8	16	2.3 GHz	3.1 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89443	
	Notes: All processors specifica The information herein Intel may update this in	is prov		el.com/							
			Men	nory optior	าร			Part Numb			
Memory options	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195	33		
momery options	ThinkServer 8GB D	DR3L	-1600MHz	z (2RX8) F	RDIMM			0C195	0C19534		
	ThinkServer 16GB	DDR3	L-1600MF		RDIMM			0C195	35		

# ThinkServer RD440 Optional Configurations - Storage and RAID

	List outpe diels drive antique for 0.5% have	Dort Nivesha			
	Hot-swap disk drive options for 3.5" bay	Part Number			
	3.5" SATA Hard Drive	0490470			
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89473			
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89474			
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89475			
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89477			
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19520			
Disk drive options	3.5" SAS Hard Drive	1			
or 3.5" disk bay models (8 x 3.5"/12 x 3.5")	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19530			
(0 X 3.5 / 12 X 3.5 )	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19531			
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19532			
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	67Y2616			
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive	4XB0F28644			
	2.5" SSD for 3.5" disk bay				
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit	0C19571			
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit	0C19572			
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit	0C19573			
	Hot-swap disk drive options for 2.5" bay	Part Number			
Disk drive options	2.5" SATA Hard Drive				
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19495			
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19496			
	2.5" SAS Hard Drive				
Diek drive ontione	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2619			
or 2.5" disk bav models	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2621			
3 x 2.5"/16 x 2.5")	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive	0A89409			
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494			
	2.5" SSD				
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive	0A89420			
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive	0A89418			
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive	0A89419			
	RAID controller and RAID upgrade options	Part Number			
	ThinkServer RAID 300 Upgrade Key for Advanced RAID	0A89422			
	ThinkServer RAID 500 Adapter II	0A89464			
	ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407			
	ThinkServer RAID 700 Adapter II	0A89463			
RAID options	ThinkServer RAID 700 Battery	67Y2647			
	ThinkServer RAID 700 Battery  ThinkServer RAID 710 Adapter	0712047 0C19489			
	ThinkServer RAID 710 Adapter  ThinkServer RAID Super Capacitor Module	0C19469 0C19490			
		0C19490 0C19491			
	ThinkServer RAID FastPath Software Key	_			
	ThinkServer RAID CacheCade Pro 2.0 Software Key	0C19492			

# ThinkServer RD440 Optional Configurations - Network, System Management, Power Supply

	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
Network and HBA	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
Network and HBA options  Lenovo 10Gbps Eth Lenovo 10Gbps Eth Lenovo 10Gbps Eth ThinkServer QLE82 ThinkServer LPe125 ThinkServer LPe125 ThinkServer QLE25 ThinkServer Trusted ThinkServer Trusted ThinkServer Management options  ThinkServer Cable r	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by Qlogic	0C19482
Security options	Trusted Platform Module options	Part Number
security options	ThinkServer Trusted Platform Module	0A89428
	System Management option for iKVM	Part Number
Systems management	ThinkServer Management Module Premium	67Y2624
Security options  Systems management options	Cable Management option	Part Number
	ThinkServer Cable management Arm	0A89476
Power aupply entions	Power supply option	Part Number
rower supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

### ThinkServer RD440 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer RD440

Described Contains Office of Contains C		Commont DOK	Comments Franchis	Dualaadad
Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows Server 2008 x	86 Edition	T		1
Windows Server 2008 Standard Edition (x86)			•	
Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (x86)			•	
Windows Server 2008 x	64 Edition	I		1
Windows Server 2008 Standard Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Enterprise Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Datacenter Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 R2 (				
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Small Business	Server 2011			
Windows Small Business Server 2011 Essentials	•		•	
Windows Small Business Server 2011 Standard	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 2	2012			
Windows Server 2012 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 2012 Hyper-V	•		•	
Windows Server 20	12 B2	I.		
Windows Server 2012 R2 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Essentials	•	•	•	•
Windows Server 2012 R2 Hyper-V	•		•	
SUSE Linux Enterprise	Server v86		L	
SUSE Linux Enterprise Server 10 SP4	SCIVCI XOO		•	
SUSE Linux Enterprise Server 11 SP2	•		•	
SUSE Linux Enterprise Server 11 SP3	•		•	
SUSE Linux Enterprise Server 11 31 3	Sorvor v64			
SUSE Linux Enterprise Server 10 SP4	Jerver X04		_	T
	_		•	
SUSE Linux Enterprise Server 11 SP2	• (DUEL)	00	•	
RedHat Enterprise Linux Ser		X86		T
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
RedHat Enterprise Linux	Server x64	T		1
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
VMware x64				
VMware ESXi 5.1 U1	•		•	•
VMware ESXi 5.5	•	•	•	•
Microsoft Hyper	V			
Microsoft Hyper-V server 2008	•		•	
Microsoft Hyper-v server 2008 R2 SP1	•		•	
Citrix				
Citrix XenServer 6.1	•		•	
Citrix XenServer 6.0.2	•		•	
		•		

#### Note

For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html

For ThinkServer operating system and virtualization software options,
please visit ThinkServer OS and virtualization Options document:
http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer\_OS\_&\_Virtualization\_Options\_Datasheet.pdf

### **ThinkServer RD440 Services Upgrade Options**

Partial list of Lenovo Services for ThinkServer RD440 models with 3-year onsite base warranty

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Upgrade Service Description Part Number									
	rait Nullibei								
Warranty 3YR Onsite 24x7x4 Hour Response	EMCOL1E4E0								
3YR Onsite 24x7x4 Hour Response	5WS0F15458								
	5WS0F15392								
3YR Onsite 9x5x4 Hour Response	5WS0F15355								
4YR Onsite 24x7x4 Hour Response	5WS0F15443								
4YR Onsite 24x7x8 Hour Response	5WS0F15395								
4YR Onsite 9x5x4 Hour Response	5WS0F15394								
4YR Onsite NBD	5WS0F15415								
5YR Onsite 24x7x4 Hour Response	5WS0F15377								
5YR Onsite 24x7x8 Hour Response	5WS0F15440								
5YR Onsite 9x5x4 Hour Response 5YR Onsite NBD	5WS0F15430								
Keep Your Drive (KYD) Service	5WS0F15419								
	EDC0E1E400								
3YR Keep Your Drive	5PS0F15436								
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376								
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349								
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448								
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389								
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359								
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456								
4YR Onsite NBD + KYD	5PS0F15459								
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402								
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381								
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366								
5YR Onsite NBD + KYD	5PS0F15391								
Priority Technical Support  3YR KYD + Priority Support	5PS0F15417								
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352								
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399								
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15444								
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418								
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398								
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468								
3YR Priority Support	5WS0F15466 5WS0E76471								
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462								
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410								
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15433								
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425								
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400								
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351								
4YR Onsite NBD + KYD + Priority Support	5PS0F15373								
4YR Onsite NBD + Priority Support	5WS0F15401								
4YR Priority Support	5WS0E77170								
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350								
5YR Onsite 24x7x4 Hour Response + RYD + Priority Support	5WS0F15350								
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471								
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15471								
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437								
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382								
5YR Onsite NBD + KYD + Priority Support	5PS0F15388								
5YR Onsite NBD + Priority Support	5WS0F15366								
5YR Priority Support	5WS0E77173								
orn Filority Support	34430E11113								

r	Upgrade Service Description	Part Number								
	Post Warranty									
8	1YR Onsite 24x7x4 Hour Response	5WS0F15435								
<u>2</u> 5	1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370								
	1YR Onsite 24x7x8 Hour Response	5WS0F15427								
3	1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361								
5	1YR Onsite 9x5x4 Hour Response	5WS0F15416								
4	1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348								
5 7	1YR Onsite NBD	5WS0F15407								
	1YR Onsite NBD + Priority Support	5WS0F15465								
0	TopSeller Priority (TopSeller models only)									
0	3YR Onsite 24x7x4 Hour Response	5WS0D73789								
9	3YR Onsite 9x5x4 Hour Response	5WS0D73787								
	4YR Onsite 24x7x4 Hour Response	5WS0D73792								
6	4YR Onsite 9x5x4 Hour Response	5WS0D73791								
6	4YR Onsite NBD	5WS0F15470								
9	3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414								
8	3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423								
9	3YR Priority Support	5WS0E76457								
9	4YR Priority Support	5WS0E76482								
6		·								

#### Note:

#### 24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

#### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

# 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation) • 24 hours a day, 7 days a week, including nights and weekends

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

#### Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

#### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced. To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

# ThinkServer RD550 with 3.5" Disk Bay - TopSeller - 70CV - I

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	ТРМ	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CV001CUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28803	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CV001DUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
1/UC/VUUTELIX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28800	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28799	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CV001GUX	1xE5-2670 v3 12C/2.3GHz/ 30MB/120W/2133MHz	4XG0F28797	1x8GB 2133MHz RDIMM	720i+1GB RAM	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
Components	s Specification						C	Compor	ents	Specifi	cation					

	2670 v3 12C/2.3GHz/ 120W/2133MHz	4XG0F28797	1x8GB 2133MHz RDIMM	720i+1GB RAM	4x3.5" HS	Open	No				
Components	Specification										
Form factor	1U rack										
Processor	Up to two 145W Ir 2.3GHz, 16 cores 10 cores up to 2.6 4 cores up to 3.5G Up to 2133MHz m	up to 2.3GH: GHz, 8 cores Hz. Two QPI	z, 14 cores up to s up to 3.2GHz, 6 link up to 9.6 G	2.6GHz, 6 cores up T/s.	12 core	s up to 2.6G	o Hz,				
Chipset	Intel C612 Platforr	n Controller I	Hub (PCH)								
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz										
Memory capacity	384GB (RDIMM, 1				24)						
Memory protection				sparing							
AnyRAID support	Supports AnyRAID 110i, 510i, and 720i. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 6 with AnyRAID 720i. 12Gb/s SAS/SATA. 720i needs cache for RAID 6 support. Optional cache for 720i: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. Also supports AnyRAID 110i on no front bay model, RAID 0 or 1 Up to 4 x 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays.										
Disk drive bays	Rear bay supports	SWAP disk dr S S ATA drives	ive days. Up to 2	x 2.5 rea	ar not-sv	vap disk driv	e bays.				
M.2 SSD module	Optional M.2 mod			M 2 SSD	drivas						
SD module	Optional SD modu										
	3.5" SATA 7 3.5" SAS 7.2 3.5" SAS 7.2	2K 6Gbs 2K 12Gbs	1TB/2TB/3TB/ 1TB/2TB/3TB/ 6TB		6TB						
Internal storage	2.5" SATA 7 2.5" SAS 12 SSD 3.5" SATA 6 M.2 SSD SD SDHC flash Note: Rear disk drive an	Gbs Gbs card	500GB/1TB 200GB/400GE 120GB/240GE 80GB/120GB 8GB/32GB	3/300GB/4							
Optical drive	Optional one Ultra	slim optical o	rive, DVD-ROM	or DVD±F	₹Ŵ		-,				
Tape drive bays	None	•									
Network interfaces	One dedicated ma Optional discrete r	network adap	oters via PCle slo	ots							
Security features	Power-on and adn 1.2-compliant). Op	tional chassi	s intrusion switc	h		,	G				
Systems management  1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microso System Center Operations Manager, Power Planner											
Operating systems supported	Microsoft Windows Windows Small Bu SUSE Linux Enter	s Server 201: usiness Serv prise Server	2 R2, 2012, and er 2011, Red Ha 11, VMware vSp	2008 R2, t Enterpris							
Base warranty	3-year limited onsi Some parts are C										

Components	Specification								
Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac, or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V.								
Graphics	Onboard Aspeed AST2400 with 16 one DisplayPort on rear. Maximum	MB memory, one DisplayPort on front, resolution: 1920x1200@60Hz							
Front ports	One DisplayPort, two USB 2.0								
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)								
Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap								
Hot-swap parts	Disk drives, power supplies, and fans								
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)							
Environmental specification	Temperature - operating Temperature - ono operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package) Note: 45 ° C continuous operating configuration	41° F to 113° F (5° C to 45° C) -10° C to 60° C -40° C to 60° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing							
	Note: 45 °C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPU GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.								
Weight	Minimum configuration: 13.5 kg (29	9.76 lb), maximum: 21 kg (46.3 lb)							
Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 in)							



AnyFabric slot 1 (Network adapter is optional) Optional 2 x 2.5" rear bays

Expansion slots
Up to two half-length PCle 3.0 x16 slots, depending on the riser cards and processors installed:
Slot 1 (riser card 1): PCle 3.0 x 16, low-profile, half length
Slot 2 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

#### Core Options for ThinkServer RD550 (partial)

4X70F28591	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45743	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive Lenovo ThinkServer 1U x16 PCle Riser 2 Kit
4XF0G45867	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply ThinkServer System Manager Premium (TSM Premium) ThinkServer DisplayPort to VGA Dongle
	, ,

# ThinkServer RD550 with 3.5" Disk Bay - TopSeller - 70CV - II

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots		Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CV001JUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28803	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001KUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001LUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001MUX	2xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	-	2x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	2	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001NUX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28804	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No	No	No	No	TPM	No	TSM	No	550Wx1 Platinum	10/14
Components	s Specification							compor	ents	Specifi	cation					

	5-2603 v3 6C/1.6GHz/ B/85W/1600MHz	4XG0F28804	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No						
Components	Specification												
Form factor	1U rack												
Processor	Up to two 145W In 2.3GHz, 16 cores 10 cores up to 2.6 4 cores up to 3.50 Up to 2133MHz m	up to 2.3GH GHz, 8 cores GHz. Two QP emory speed	z, 14 cores up to s up to 3.2GHz, 6 l link up to 9.6 G d. Up to 45MB ca	<sup>'</sup> 2.6GHz, 6 cores u∤ T/s.	12 core	s up to 2.ĠG							
Chipset	Intel C612 Platfor												
Memory DIMMs	24 DIMM sockets processor). RDIM	M and LRDIN	/IM (cannot be in	termixed)	<u>,</u> DDR4,	(4-channel purple) up to 2133	oer MHz						
Memory capacity		384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)											
Memory protection				sparing									
AnyRAID suppor	RAID 0, 1, 10 with RAID 0, 1, 10 with RAID 0, 1, 10, 5, 0 RAID 6 support of flash with super contrast FastPath. Also sup	Supports AnyRAID 110i, 510i, and 720i. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 6 with AnyRAID 720i. 12Gb/s SAS/SATA. 720i needs cache for RAID 6 support. Optional cache for 720i: 1GB read-only memory. 1GB/2GB/4GB lash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. Also supports AnyRAID 110i on no front bay model, RAID 0 or 1											
Disk drive bays	Rear bay supports	Up to 4 x 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays. Rear bay supports SATA drives only											
M.2 SSD module													
SD module	Optional SD modu	<u> </u>	<del>-                                    </del>			3							
Internal storage	3.5" SATA 7 HDD 3.5" SAS 7. 3.5" SAS 7. 2.5" SATA 7 2.5" SATA 8 M.2 SSD SD SDHC flash	2K 6Gbs 2K 12Gbs .2K 6Gbs .2Gbs Gbs card	1TB/2TB/3TB/ 1TB/2TB/3TB/ 6TB 500GB/1TB 200GB/400GB 120GB/240GB 80GB/120GB 8GB/32GB	4TB 5/800GB 5/300GB/4	180GB/6								
Optical drive	Note: Rear disk drive ar Optional one Ultra	i <u>a M.2 SSD can r</u> Islim ontical d	not be supported simul Nriva DVD-ROM	or DVD+I	nıy one⊃ca <b>R\M</b>	n be selected pe	er system.						
Tape drive bays	None	onin optical (	arive, by by riolvi	OI DVD±I	1 1 4 4								
Network interface	One dedicated ma	anagement p	ort. One AnyFab oters via PCIe slo	ric slots fo	or custor	nized LOM.							
Security features	Power-on and adr 1.2-compliant). Or	ninistrator pa	ssword. Optional	Trusted I		•	G						
1.2-compliant). Optional chassis intrusion switch   Supports ThinkServer System Manager (TSM), optional TSM Premium.   UEFI. Onboard Aspeed AST2400 graphics/management processor,   IPMI 2.0-compliant baseboard management controller (BMC).   Control Panel LEDs shows the status of power, ID, network, system.   Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsof System Center Operations Manager, Power Planner													
Operating system supported	Microsoft Window Windows Small B SUSE Linux Ente	s Server 201 usiness Serv rprise Server	2 Ř2, 2012, and er 2011, Red Ha 11, VMware vSp	2008 R2, t Enterpri	ise Linux								
Base warranty	3-year limited ons Some parts are C	ite service w	ith 9x5/NBD.										

Components	Specification									
Power supply	supplies. 550 W and 1100 W are 80									
Graphics	Onboard Aspeed AST2400 with 16 one DisplayPort on rear. Maximum		ont,							
Front ports	One DisplayPort, two USB 2.0									
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)									
Cooling	3 (7+1, dual processors) or 6 (5+1, single processor), hot-swap									
Hot-swap parts	Disk drives, power supplies, and fans									
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)								
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing								
	Note: 45 °C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPUno GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.									
Weight	Minimum configuration: 13.5 kg (29	0.76 lb), maximum: 21 kg (46.3 lb)								
Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 in	)							



AnyFabric slot 1 (Network adapter is optional) Optional 2 x 2.5" rear bays

Expansion slots
Up to two half-length PCle 3.0 x16 slots, depending on the riser cards and processors installed:
Slot 1 (riser card 1): PCle 3.0 x 16, low-profile, half length
Slot 2 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

#### Core Options for ThinkServer RD550 (partial)

4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM
4XB0F28712	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45743	ThinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28714	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XF0G45878	Lenovo ThinkServer 1U x16 PCle Riser 2 Kit
4X20F28576	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867	ThinkServer System Manager Premium (TSM Premium)
4X90F92980	ThinkServer DisplayPort to VGA Dongle

### ThinkServer RD550 with 3.5" Disk Bay - TopSeller - 70CV - III

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CV001RUX	2xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	-	16x8GB 2133MHz RDIMM	510i	4x3.5" HS	4x2TB 3.5" SATA6Gbs 7.2K	No	1	No	10GbEx2 RJ-45 AnyFabric	TPM	No	TSM Premium	No	750Wx2 Platinum	12/14
70CV001SUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	2x8GB 2133MHz RDIMM	110i	4x3.5" HS	2x1TB 3.5" SATA6Gbs 7.2K	No	1	DVD±RW	GbEx4 RJ-45 AnyFabric	TPM	No	TSM Premium	No	750Wx2 Platinum	02/15

Components	Specification	Components	Specification
Form factor	1U rack		Up to two redun
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	Power supply	supplies. 550 W PLUS Platinum are 110V - 240\
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache	Graphics	Onboard Aspee one DisplayPort
Chipset	Intel C612 Platform Controller Hub (PCH)	Front ports	One DisplayPor
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	Rear ports	One DisplayPor
,	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Cooling	8 (7+1, dual pro
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Hot-swap parts	Disk drives, pov
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	Noise emissions	Operating: < 6.5
AnyRAID support	Supports AnyRAID 110i, 510i, and 720i. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 6 with AnyRAID 720i. 12Gb/s SAS/SATA. 720i needs cache for RAID 6 support. Optional cache for 720i: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. Also supports AnyRAID 110i on no front bay model, RAID 0 or 1 Up to 4 x 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays.	Environmental specification	Temperature - opera Temperature - non o Temperature - non o Altitude - operating Humidity - operating Humidity - storage ( <i>Vacutical Society of Continuo GPU card/redundant</i>
Disk drive bays	Up to 4 x 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays.	Weight	Minimum config
M.2 SSD module	Rear bay supports SATA drives only Optional M.2 module, supports up to 2 optional M.2 SSD drives.	Dimensions	Height: 43 mm (
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	Dinisterver	
3D Module	3.5" SATA 7.2K 6Gbs 1TB/2TB/3TB/4TB/5TB/6TB	0	
Internal storage	HDD   3.5" SAS 7.2K 6Gbs   1TB/2TB/3TB/4TB   3.5" SAS 7.2K 12Gbs   6TB   2.5" SATA 7.2K 6Gbs   500GB/1TB   2.5" SAS 12Gbs   200GB/400GB/800GB   SSD   3.5" SATA 6Gbs   120GB/240GB/300GB/480GB/600GB/800GB   M.2 SSD   80GB/120GB   SD SDHC flash card   8GB/32GB   8G	AnyFabric slot 1 (No Expansion slots	etwork adapter is optic
Optical drive	Note: Rear disk drive and M.2 SSD can not be supported simultaneously, only one can be selected per system.	Up to two half-leng	gth PCIe 3.0 x16 s
Tape drive bays	Optional one Ultraslim optical drive, DVD-ROM or DVD±RW  None	Slot 1 (riser card 1	
Tape unive bays	One dedicated management port. One AnyFabric slots for customized LOM.	Slot 2 (riser card 2	,
Network interfaces	Optional discrete network adapters via PCIe slots	Core Options for	
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium.	4X70F28590 Th 4X70F28591 Th 4XB0F28712 Th	inkServer 32GB D
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	4XB0G45719 Th 4XB0G45743 Th 4XB0F28714 Th 4XB0G45715 Th 4XF0G45878 Le 4X20F28576 Th	inkServer Gen 5 3 inkServer 3.5" 240 inkServer Gen 5 3 inkServer Gen 5 3 novo ThinkServer inkServer Gen 5 7
Operating systems supported	SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2	4XF0G45867 Th 4X90F92980 Th	inkServer Display
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	For a list of all sup	oported options, P

П	Components	opecinication										
	Power supply	are 110V - 240V.										
	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz										
Front ports One DisplayPort, two USB 2.0												
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)										
	Cooling	8 (7+1, dual processors) or 6 (5+1,	single processor), hot-swap									
	Hot-swap parts	Disk drives, power supplies, and fans										
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)									
	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing									
		n limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPUno Cle SSD adapter/no 1100W PSU.										
٠.	Weight	Minimum configuration: 13.5 kg (29	7.76 lb), maximum: 21 kg (46.3 lb)									
4	Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 in)									



AnyFabric slot 1 (Network adapter is optional) Optional 2 x 2.5" rear bays

**Expansion slots**Up to two half-length PCle 3.0 x16 slots, depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, low-profile, half length Slot 2 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

#### Core Options for ThinkServer RD550 (partial)

4X70F28590 Th	ninkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591 Th	ninkServer 32GB DDR4-2133MHz (4Rx4)RDIMM
4XB0F28712 Th	ninkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719 Th	ninkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45743 Th	ninkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28714 Th	ninkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715 Th	ninkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XF0G45878 Le	enovo ThinkServer 1U x16 PCIe Riser 2 Kit
4X20F28576 Th	ninkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867 Th	ninkServer System Manager Premium (TSM Premium)
4X90F92980 Th	ninkServer DisplayPort to VGA Dongle

### ThinkServer RD550 with 2.5" Disk Bay - TopSeller - 70CX - I

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CX001XUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX001YUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28800	1x8GB 2133MHz RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX0020UX	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28799	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX0021UX	1xE5-2670 v3 12C/2.3GHz/ 30MB/120W/2133MHz	4XG0F28797	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX0023UX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14

70CX0023UX	1xE5-26 15MB/85		8 6C/2.4GHz/ 866MHz	4XG0F28802	RDIMM	720IX+1GB RAM	12x2.5" HS	Open	No		
Components	s S	рес	ification								
Form factor		U ra									
Processor  Chipset		.3GH 0 co core Jp to	Hz, 16 cores res up to 2.6 es up to 3.50 2133MHz m	up to 2.3GH; GHz, 8 cores Hz. Two QPI emory speed	-2600 v3 family z, 14 cores up to s up to 3.2GHz, 6 link up to 9.6 G d. Up to 45MB ca	2.6GHz, 1: 6 cores up t T/s.	2 cores	up to 2.6GH	Z,		
Chipset	Ir	ntel C612 Platform Controller Hub (PCH)									
Memory DIMMs 24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MH											
Memory capa					68GB (LRDIMM		1)				
Memory prot					ep, and memory						
AnyRAID sur	Supports AnyRAID 110i, 510i, and 720i on 8 x 2.5" model, 720ix on 12 x 2.5" model. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.										
Disk drive ba	ys U	Jp to	8 (0-7) or 12	2 (0-11) 2.5" I	not-swap disk dr	ive bays					
M.2 SSD mo	dula C	ptio	nal M.2 mod Ind 720ix mo	ule, supports	up to 2 optional	M.2 ŠSD c	Irives. A	vailable on 1	2 x		
SD module	C	)ptio	nal SD modu	ile, supports	up to 2 optional	SDHC flash	n cards				
Internal stora	ige s	SSD	2.5" SATA 7.2 2.5" SAS 10K 2.5" SAS 15K 2.5" SAS 12G 2.5" SATA 6G M.2 SSD SDHC flash c	K 6Gbs - HS         300GB/450GB/600GB           Gbs - HS         200GB/400GB/800GB           Gbs - HS         120GB/240GB/300GB/480GB/600GB/800GB           80GB/120GB         80GB/120GB							
Optical drive		lone		ara	DGD/02GD				_		
Tape drive ba	1	lone									
Network inter	faces C	ne o	nal discrete i	network adáp	ort. Two AnyFabr oters via PCIe slo	ots					
Security feat	1	.2-cc	ompliant). Or	tional chassi	ssword. Optiona s intrusion switc	h		`	ì		
Systems management	U IF C S E S	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner									
Operating sys	stems V S	Vindo SUSE	ows Small Bu Linux Enter	usiness Server prise Server	2 R2, 2012, and er 2011, Red Ha 11, VMware vSp	t Enterprise	E Linux 6	6.5,			
Base warrant	., 3	-yea	r limited ons	ite service wi	th 9x5/NBD. laceable Units	•					

	Components	Specification									
_	Power supply	Up to two redundant hot-swap 750 \\ 1100 W is 80 PLUS Platinum qualifi qualified. 750 W Titanium is 200V -	ied, 750 W is 80 PLUS Platinum or Titanium								
	Graphics	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@6	MB memory, one DisplayPort on rear. 50Hz								
	Front ports	None	lone								
	Rear ports	One DisplayPort, two USB 3.0, one	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)								
	Cooling	8 (7+1, dual processors) or 6 (5+1,	single processor), hot-swap								
	Hot-swap parts	Disk drives, power supplies, and far	าร								
	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)								
6	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  Note: 45 °C continuous operation configuration	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing Imitation: no 145W CPU/no 135W 4, 6, or 8 cores CPU/no								
4		GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.									
4	Weight	Minimum configuration: 13.5 kg (29									
	Dimensions	Height: 43 mm (1.7 in), width: 482 n	nm (19 in), depth: 780 mm (30.7 in)								



AnyFabric slot 1 (Network adapter is optional) AnyFabric slot 2 (Network adapter is optional)

#### **Expansion slots**

Up to three low-profile and half-length PCIe 3.0 x16 slots, depending on the riser cards and

processors installed: Slot 1 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length Slot 2 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length

Slot 3 (riser card 2): PCIe 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

### Core Options for ThinkServer RD550 (partial)

4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM 4XF0G45880 Lenovo ThinkServer 1U x8/x8 PCle Riser Kit

4X20F28576 ThinkServer Gen 5 750W Titanium Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

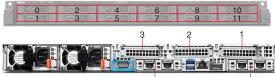
4X90F92980 ThinkServer DisplayPort to VGA Dongle

### ThinkServer RD550 with 2.5" Disk Bay - TopSeller - 70CX - II

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CX0024UX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CX0025UX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CX0026UX	2xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	-	2x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CX0027UX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28804	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No	No	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14

Components	Spec	ification							
Form factor	1U ra								
		two <b>145W Intel Xeon E5-2600 v3</b> family processors with 18 cores up to Hz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,							
Processor	10 co	ores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, es up to 3.5GHz. Two QPI link up to 9.6 GT/s.							
		2133MHz memory speed. Up to 45MB cache	lli						
Chipset		C612 Platform Controller Hub (PCH)	٦li						
•		IMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	-   <del>`</del>						
Memory DIMMs	proce	essor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz							
Memory capacity		iB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	٦ľi						
		memory mirroring, lockstep, and memory sparing	٦ľ						
Supports AnyRAID 110i, 510i, and 720i on 8 x 2.5" model, 720ix on 12 x 2.5" model. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s AS/SATA, optional key for RAID 5/50.									
AnyRAID support	cache	e for RAID 6/60 support. 720ix must have a cache.	``∥						
		nal cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with							
	super	r capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	_						
Disk drive bays Up to 8 (0-7) or 12 (0-11) 2.5" hot-swap disk drive bays									
M.2 SSD module	Optional M.2 module, supports up to 2 optional M.2 SSD drives. Available on 12 x 2.5" and 720ix model only								
SD module	Optio	nal SD module, supports up to 2 optional SDHC flash cards							
		2.5" SATA 7.2K 6Gbs - HS 500GB/1TB							
	HDD SSD	D 2.5" SAS 10K 6Gbs - HS 300GB/600GB/900GB/1.2TB							
		2.5" SAS 15K 6Gbs - HS 300GB/450GB/600GB							
Internal storage		2.5" SAS 12Gbs - HS 200GB/400GB/800GB	- 1						
		M.2 SSD 80GB/120GB							
Ontinal duina	SD	SDHC flash card 8GB/32GB	4						
Optical drive	None		ㅢ.						
Tape drive bays	None		<u> </u>						
Network interfaces	Optio	dedicated management port. Two AnyFabric slots for customized LOM.  anal discrete network adapters via PCIe slots	ا ا						
Security features	1.2-c	er-on and administrator password. Optional Trusted Platform Module (TCG ompliant). Optional chassis intrusion switch							
	Supp	orts ThinkServer System Manager (TSM), optional TSM Premium.	<b></b>						
		. Onboard Aspeed AST2400 graphics/management processor,	- (						
Systems		2.0-compliant baseboard management controller (BMC).							
management	Control Pariet LEDS shows the status of power, 1D, network, system.								
· ·	Supports ThinkServer management software: Diagnostics, Deployment Manager,								
		Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner							
		osoft Windows Server 2012 R2, 2012, and 2008 R2,	- 4						
Operating systems		ows Small Business Server 2011, Red Hat Enterprise Linux 6.5,	4						
supported		E Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2							
Daga warranti		ar limited onsite service with 9x5/NBD.	⊣'						
Base warranty		e parts are Customer Replaceable Units							

	Components	Specification									
	Power supply	Up to two redundant hot-swap 750 1100 W is 80 PLUS Platinum qualif qualified. 750 W Titanium is 200V -	W ac or 1100 W ac power supplies. fied, 750 W is 80 PLUS Platinum or Titanium 240V, 1100 W is 110V - 240V.								
	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz									
	Front ports	None									
	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)									
	Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap									
	Hot-swap parts	Disk drives, power supplies, and fans									
	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)								
6	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing								
Note: 45° C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.											
4	Weight	Minimum configuration: 13.5 kg (29	9.76 lb), maximum: 21 kg (46.3 lb)								
	Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 in)								



AnyFabric slot 1 (Network adapter is optional) AnyFabric slot 2 (Network adapter is optional)

#### **Expansion slots**

Up to three low-profile and half-length PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length Slot 2 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length

Slot 3 (riser card 2): PCIe 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

#### Core Options for ThinkServer RD550 (partial)

4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591 ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM
4XF0G45880 Lenovo ThinkServer 1U x8/x8 PCIe Riser Kit
4X20F28576 ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)
4X90F92980 ThinkServer DisplayPort to VGA Dongle

# ThinkServer RD550 - Relationship

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28800	1x8GB 2133MHz RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14

# **ThinkServer RD550 Options**

### Partial list of accessories supported on ThinkServer RD550

	Processors
41/00500700	
4XGUF28/90	Lenovo ThinkServer RD550 Intel Xeon E5-2699 v3 (18C, 145W, 2.3GHz) Processor Option Kit
4XG0F28791	Lenovo ThinkServer RD550 Intel Xeon E5-2698 v3 (16C, 135W, 2.3GHz) Processor Option Kit
4XG0F28792	Lenovo ThinkServer RD550 Intel Xeon E5-2697 v3 (14C, 145W, 2.6GHz) Processor Option Kit
4XG0F28793	Lenovo ThinkServer RD550 Intel Xeon E5-2695 v3 (14C, 120W, 2.3GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2690 v3 (12C, 135W, 2.6GHz) Processor Option Kit
4VC0F0070F	Lenovo ThinkConyay DDE50 Intel Xeon Es 2000 vo (120, 100W, 2.00112) I rocessor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2683 v3 (14C, 120W, 2.0GHz) Processor Option Kit
4XG0F28796	Lenovo ThinkServer RD550 Intel Xeon E5-2680 v3 (12C, 120W, 2.5GHz) Processor Option Kit
4XG0F28797	Lenovo ThinkServer RD550 Intel Xeon E5-2670 v3 (12C, 120W, 2.3GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit
4XC0F00700	Leftovo ThinkServer nD350 Intel Xeon E3-2000 v3 (100, 105w, 2.00112) Processor Option Kit
4XG0F28799	Lenovo ThinkServer RD550 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit
4XG0F28800	Lenovo ThinkServer RD550 Intel Xeon E5-2640 v3 (8C, 90W, 2.6GHz) Processor Option Kit
4XG0F28801	Lenovo ThinkServer RD550 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit
4XG0F28802	Lenovo ThinkServer RD550 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit
4VC0E20002	Lenovo ThinkServer RD550 Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit
4XG0F20003	Leflovo TrillikServer ND350 litter Xeori E3-2009 v3 (OC, 65W, 1.9GHz) F10cessor Option Kit
4XG0F28804	Lenovo ThinkServer RD550 Intel Xeon E5-2603 v3 (6C, 85W, 1.6GHz) Processor Option Kit
4XG0F28805	Lenovo ThinkServer RD550 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit
4XG0F28806	Lenovo ThinkServer RD550 Intel Xeon E5-2630L v3 (8C, 55W, 1.8GHz) Processor Option Kit
4YC0E29920	Lenovo ThinkServer RD550 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit
4AGUF28830	Lenovo ThinkServer RD550 Intel Xeon E5-2643 v3 (6C, 135W, 3.4GHz) Processor Option Kit
4XG0F28831	Lenovo ThinkServer RD550 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit
4XG0F28832	Lenovo ThinkServer RD550 Intel Xeon E5-2623 v3 (4C, 105W, 3.0GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit
	Memory
4V70E00E00	
	ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM
	ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM
4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
	ThinkServer 32GB DDR4-2133MHz (4Rx4) LRDIMM
17(701 20001	Drives - 3.5"
0.5" !! 0	
	SATA Hard Drives
4XB0F28712	ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0F28713	ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	27.2K SAS Hard Drives
4XB0G45716	ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45717	ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
3.5" Hot Swap	SATA Solid State Drives
4XB0G45742	ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45743	ThinkServer Gen 5 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 3.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4VD0045745	Think Convey Con 5.5.5 3000D Value Read-Optimized OATA OODps 110t Owap Onld Otale Drive
	ThinkServer Gen 5 3.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 3.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45747	ThinkServer Gen 5 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	SAS Solid State Drives
4XB0G45722	ThinkServer Gen 5 3.5" 200GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
4XD0G45733	Thinkselver den 5.5.5 2000B Enterprise Performance SAS 1200BS For Swap Solid State Drive
	ThinkServer Gen 5 3.5" 400GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
4XB0G45735	ThinkServer Gen 5 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
	Drives - 2.5"
2 E" Hot Core	
Z.O HOLOWAD	SATA Hard Drives
4XBUG45/20	ThinkServer Gen 5 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45721	ThinkServer Gen 5 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	0 10K SAS Hard Drives
	ThinkServer Gen 5 2.5" 300GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
4VD0C45722	Think Corver Con 5.0 50000 for Enterprise 2.42 COhe Let Over Let Over Let Over 100 Delice
4ADUG45/23	ThinkServer Gen 5 2.5" 600GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45724	ThinkServer Gen 5 2.5" 900GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45725	ThinkServer Gen 5 2.5" 1.2TB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	15K SAS Hard Drives
	Think Cruyer Cop E 2 # 146CD 15K Enterprise CAC COppe Het Curp Herd Drive
2.5" Hot Swap	ThinkServer Gen 5 2.5" 146GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
2.5" Hot Swap 4XB0G45726	ThinkServer Gen 5 2.5" 300GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
2.5" Hot Swap 4XB0G45726 4XB0G45727	
2.5" Hot Swap 4XB0G45726 4XB0G45727	ThinkServer Gen 5 2.5" 450GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728	
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45729	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45729 2.5" Hot Swap	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive SATA Solid State Drives
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45729 2.5" Hot Swap 4XB0G45736	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive  SATA Solid State Drives  ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45729 2.5" Hot Swap 4XB0G45736	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive SATA Solid State Drives
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45729 2.5" Hot Swap 4XB0G45736 4XB0G45737	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive  SATA Solid State Drives  ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive  ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45729 2.5" Hot Swap 4XB0G45736 4XB0G45737 4XB0G45738	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive  SATA Solid State Drives  ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive  ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive  ThinkServer Gen 5 2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
2.5" Hot Swap 4XB0G45726 4XB0G45728 4XB0G45728 4XB0G45729 2.5" Hot Swap 4XB0G45736 4XB0G45737 4XB0G45738 4XB0G45738	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive  SATA Solid State Drives  ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
2.5" Hot Swap 4XB0G45726 4XB0G45727 4XB0G45728 4XB0G45728 4XB0G45736 4XB0G45736 4XB0G45737 4XB0G45738 4XB0G45739 4XB0G45739	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive  SATA Solid State Drives  ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive  ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive  ThinkServer Gen 5 2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662	ThinkServer 1.6TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by FusionIO ThinkServer 3.2TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by FusionIO
	AnyRAID
4XB0F28690	ThinkServer RAID 110i RAID 5 Upgrade
4XB0F28691	ThinkServer RAID 510i AnyRAID Adapter
4XB0F28692	ThinkServer RAID 510i RAID 5 Upgrade
4XB0F28693	ThinkServer RAID 720i AnyRAID Adapter
4XB0F28694	ThinkServer RAID 720ix AnyRAID Adapter with Expander
4XB0F28695	ThinkServer RAID 720i 1GB Modular DRAM Upgrade
4XB0F28696	ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade
	ThinkServer RAID 720i 2GB Modular Flash and Supercapacitor Upgrade
	ThinkServer RAID 720i 4GB Modular Flash and Supercapacitor Upgrade
	Connectivity & Host Bus Adapters
Cle Ethernet	Adapters - 1Gbps
	ThinkServer I350-T2 PCIe 1Gb 2 Port Base-T Ethernet Adapter by Intel
4XC0F28731	ThinkServer I350-T4 PCIe 1Gb 4 Port Base-T Ethernet Adapter by Intel
	ed Network Adapters - 10Gpbs
4XC0F28732	ThinkServer X540-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel
4XC0F28733	ThinkServer X520-SR2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel
	ThinkServer X520-DA2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel
4XC0F28735	ThinkServer 10Gb SR Optical Module by Intel
4XC0F28736	ThinkServer OCe14102-UX-L PCIe 10Gb 2 Port SFP+ Converged Network Adapter by Emulex
4XC0F28737	ThinkServer 10Gb SR Optical Module by Emulex
Cle Converg	ed Network Adapters - 40Gpbs
	ThinkServer OCe14401-UX-L PCIe 40Gb 1 Port QSFP+ Converged Network Adapter by Emule
	ThinkServer 40Gb SR Optical Module by Emulex
	annel Adapters
	ThinkServer LPe16002B-M8-L PCIe 8Gb 2 Port Fibre Channel Adapter by Emulex
4XB0F28705	ThinkServer LPe16002B-M6-L PCIe 16Gb 2 Port Fibre Channel Adapter by Emulex
	ThinkServer QLE2672 PCIe 16Gb 2 Port Fibre Channel Adapter by Qlogic
	ers & Upgrades
	ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter by LSI
	ThinkServer CacheVault Data Protection Upgrade
	ThinkServer RAID FastPath Key
4XB0F28702	ThinkServer RAID CacheCade Pro 2.0 Key
	Backup Options
4XF0G45866	ThinkServer LTO-6 Linear Tape Drive Kit by Tandberg
4XB0F28689	ThinkServer 2.5TB SAS 6Gbps LTO-6 Tape
	Redundant Power Supply
4X20F28579	Lenovo ThinkServer Gen 5 550W Platinum Hot Swap Power Supply
4X20F28575	Lenovo ThinkServer Gen 5 750W Platinum Hot Swap Power Supply Lenovo ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4X20F28576	Lenovo ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4X20F28577	Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply
	System Options
	Lenovo ThinkServer Gen 5 1U 4-Post Slide Rail Kit
	Lenovo ThinkServer Gen 5 1U Cable Management Arm
	Lenovo ThinkServer 1U x16 PCle Riser 2 Kit
	Lenovo ThinkServer 1U x16 PCle Riser 1 Kit
	Lenovo ThinkServer 1U x8/x8 PCIe Riser Kit
4XF0G45885	Lenovo ThinkServer Gen 5 1U 3.5" 4-Drive Backplane Kit
	Lenovo ThinkServer Gen 5 4-Post Static Rail Kit
	Lenovo ThinkServer Gen 5 2.5" 2-Drive Rear Backplane Kit
4X90F92980	Lenovo ThinkServer Gen 5 DisplayPort to VGA Dongle
4XF0G45876	Lenovo ThinkServer Gen 5 Cable Management Bar
4X90F92964	ThinkServer C13-C14 WW 250V 10A 1.8m Jumper Cord
	ThinkPad UltraSlim USB DVD Burner
	Microsoft Windows Server ROK
4XI0E51561	Windows Server 2012 R2 Standard ROK (2 CPU/2VMs)
4XI0E51562	Windows Server 2012 R2 Datacenter ROK (2 CPU)
11/10/25/2500	Windows Server 2012 R2 Essentials ROK (1-2 CPU)

### ThinkServer RD650 Overview

#### ThinkServer RD650 - Front and rear view

ThinkServer RD650 with 3.5" Disk Bay - Front view



ThinkServer RD650 with 2.5" + 3.5" Disk Bay - Front view



ThinkServer RD650 with 2.5" Disk Bay - Front view



Note: Some modules are optional depending on models.

ThinkServer RD650 - Rear view (All chassis types share one rear view)



#### ThinkServer RD650 supporting list for front disk drive bays, rear disk drive bays, ultraslim optical bays, tape drive bays, M.2 SSD drives

			When this Ar	nyRAID is selecte	ernal storage can be supported		
Chassis Type	Front Disk Bays Supported	Ultraslim Optical Bay Supported	AnyRAID 110i (SATA)	AnyRAID 510i (SATA/SAS)	AnyRAID 720i (SATA/SAS)	AnyRAID 720ix (SATA/SAS)	
ThinkServer RD650 with 3.5" Disk Bay	6 x 3.5"	-	Front bay	Front bay	Front bay	-	
THIRSelver AD000 With 3.5 Disk bay	12 x 3.5"	-	-	-	-	Front bay + rear bay/M.2 SSD	
ThinkServer RD650 with 2.5" + 3.5" Disk Bay	6 x 2.5" + 9 x 3.5"	-	-	-	-	Front bay + rear bay/M.2 SSD	
	8 x 2.5"	Optional	-	Front bay	Front bay	Front bay + rear bay/M.2 SSD/Tape	
ThinkServer RD650 with 2.5" Disk Bay	16 x 2.5"	Optional	-	-	-	Front bay + rear bay/M.2 SSD	
Hillik Server nD030 with 2.5 Disk bay	24 x 2.5"	-	-	-	-	Front bay + rear bay/M.2 SSD	
	No front bay	-	M.2 SSD	-	-	-	

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

Note:
1. "- " shows the configuration is not available.
2. Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be selected per system.
3. Rear disk bay supports SATA only.

Type-					Disk		M.2/SD	PCIe x8 SSD	Slots (HL/		Tape	Discrete		Chassis intrusion	Svstem	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet		switch	mgmt	os	wty	Power
70D0000FUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28820	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D0000GUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No		1100Wx1 Platinum
70D0000HUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28817	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D0000JUX	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	l 3-vear	1100Wx1 Platinum
70D0000KUX	1xE5-2690 v3 12C/2.6GHz/ 30MB/135W/2133MHz	4XG0F28811	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
Component	components Specification Components Specification																	

	2090 V3 122/2:0GH12/ 4XG0F28811   TXOGB 2133WH12								
Components	Specification								
Form factor	2U rack								
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache								
Chipset	Intel C612 Platform Controller Hub (PCH)								
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz								
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)								
Memory protection	ECC, memory mirroring, lockstep, and memory sparing								
AnyRAID support	Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath								
Disk drive bays	Up to 6 (0-5) or 12 (0-11) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot- swap disk drive bays on 12 x 3.5" models. Rear bay supports SATA drives only								
M.2 SSD module	Optional M.2 module, supports up to 2 optional M.2 SSD drives. Available on 12 x 3.5" and 720ix models only								
SD module	Optional SD module, supports up to 2 optional SDHC flash cards								
Internal storage	3.5" SATA 7.2K 6Gbs 1TB/2TB/3TB/4TB/5TB/6TB 3.5" SAS 7.2K 6Gbs 1TB/2TB/3TB/4TB/ 3.5" SAS 7.2K 12Gbs 6TB 2.5" SATA 7.2K 6Gbs 500GB/1TB 2.5" SAS 12Gbs 200GB/400GB/800GB  SSD 3.5" SATA 6Gbs 120GB/240GB/300GB/480GB/600GB/800GB PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB M.2 SSD 80GB/120GB SD SDHC flash card 8GB/32GB  Note: SAS drive needs 510i/720i/720ix.								
Optical drive	None								
Tape drive bays	None								
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots								
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch								
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner								
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2								
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units								

	Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac, 1100 W ac, or 1600 W ac power supplies. 550 W, 1100 W, and 1600 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 1600 W will automatically operate in 1100W if the system line input is 100-127V. Up to 135W CPU on 550 W and 12 x 3.5" model								
	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear.  Maximum resolution: 1920x1200@60Hz								
١	Front ports	None								
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)								
1	Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap								
1	Hot-swap parts	Disk drives, power supplies, and fans								
	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)								
	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing Humidity - storage (with package)								
4		Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.								
	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)								
+	Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)								
п		70111 0 7 5 0 4								



#### **Expansion slots**

Up to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard):

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2):

PCIe 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2):

PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2):

PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

#### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

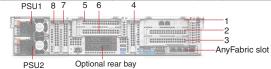
For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	M.2/SD module		(HL/	Optical		Discrete ethernet			System mgmt	Preloaded OS	Base wty	Power
70D00025UX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28818	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D00026UX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	110i	6x3.5" HS	Open	No	No	0/0	None	None	No	ТРМ	No	TSM	No	3-year	550Wx1 Platinum

Components	Specification	Components				
Form factor	2U rack	•				
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to					
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	Power supply				
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	li ower suppry				
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.					
	Up to 2133MHz memory speed. Up to 45MB cache					
Chipset	Intel C612 Platform Controller Hub (PCH)	Graphics				
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	L .				
INICITIOTY DIIVINS	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Front ports				
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Rear ports				
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	Cooling				
	Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model.	Hot-swap parts				
	RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5.	Noise emissions				
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.					
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs					
	cache for RAID 6/60 support. 720ix must have a cache.					
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with	Environmental				
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath	specification				
Disk drive bays	Up to 6 (0-5) or 12 (0-11) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-					
Diok dilvo bayo	swap disk drive bays on 12 x 3.5" models. Rear bay supports SATA drives only					
M.2 SSD module	Optional M.2 module, supports up to 2 optional M.2 SSD drives.					
	Available on 12 x 3.5" and 720ix models only	Weight Dimensions				
SD module	Optional SD module, supports up to 2 optional SDHC flash cards					
	3.5" SATA 7.2K 6Gbs   1TB/2TB/3TB/4TB/5TB/6TB					
	HDD 3.5" SAS 7.2K 6Gbs 1TB/2TB/3TB/4TB/ 3.5" SAS 7.2K 12Gbs 6TB	0 3				
	3.5" SAS 7.2K 12Gbs 6TB	. 1 4				
	2.5" SATA 7.2K 6Gbs 500GB/1TB	2 5				
Internal storage	2.5" SAS 12Gbs 200GB/400GB/800GB					
	SSD 3.5" SATA 6Gbs 120GB/240GB/300GB/480GB/600GB/800GB	Funancian state				
	PCIe 2.0 x8 SSD adapter   1.61B/3.21B	Expansion slots				
	M.2 SSD 80GB/120GB	Up to eight half-len				
	SD SDHC flash card 8GB/32GB	Slot 1 (riser card 1) Slot 2 (riser card 1)				
Ontinal drive	Note: SAS drive needs 510i/720i/720ix.	Slot 3 (riser card 1)				
Optical drive	None	Slot 4 (onboard):				
Tape drive bays	None	Slot 5 (riser card 2)				
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete	Slot 6 (riser card 2)				
	network options is also available via PCIe slots	Slot 7 (onboard):				
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	Slot 8 (onboard):				
	1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium.	Note: Slot 1-8 are x8 wire				
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	Core Options for				
	IPMI 2.0-compliant baseboard management controller (BMC).	4X70F28589 Thin				
Systems	Control Panel LEDs shows the status of power, ID, network, system.	4XF0G45881 Thin				
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,					
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4X20F28577 Lend				
	System Center Operations Manager, Power Planner	4X90F92980 Thin				
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,					
Operating systems	Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5,	For a list of all supp				
supported	SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2					
	3-year limited onsite service with 9x5/NBD.					
Base warranty	Some parts are Customer Replaceable Units					
	Serie parte and Casterner representation of the	I				

Components	opecinication							
Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinuis 200V - 240V, others are 110V - 21100W if the system line input is 10 x 3.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 100-127V. Up to 135W CPU on 550 W and 12						
Graphics	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@	speed AST2400 with 16MB memory, one DisplayPort on rear. esolution: 1920x1200@60Hz						
Front ports	None							
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)							
Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap							
Hot-swap parts	Disk drives, power supplies, and fans							
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)							
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  Note: 45 ° C continuous operation configuration	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing						
Weight	redundant PSU/no FLFH card/no PCIe SSD adapter.  Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)							
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)							





#### Expansion slots

Up to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

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4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

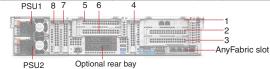
4X90F92980 ThinkServer DisplayPort to VGA Dongle

								PCle x8	Slots					Chassis				
Type-					Disk		M.2/SD	SSD	(HL/		Tape	Discrete		intrusion	System	Preloaded	Base	i l
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70D00029UX	2xE5-2640 v3 8C/2.6GHz/		16x8GB	720ix	12x3.5"	12x4TB 3.5" SATA	No	No	6/0	None	None	10GbEx2 RJ45	TDM	No	TSM	No	2 voor	1100Wx2
7000002907	20MB/90W/1866MHz	-	2133MHz RDIMM	+1GB RAM	HS	7.2K HS	INO	INO	6/0	None	None	TUGUEXZ NJ45	I FIVI	INO	Premium	INO	3-year	Platinum

Components	Specification	Components
Form factor	2U rack	•
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache	Power supply
Chipset	Intel C612 Platform Controller Hub (PCH)	Out a bit is a
Mamani DIMMa	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Graphics Front ports
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Rear ports
	ECC, memory mirroring, lockstep, and memory sparing	Cooling
Memory protection		
AnyRAID support	Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5.10 RAID 5.10i, 6Gb/s SAS/SATA, optional key for RAID 5.50. RAID 0, 1, 10 with AnyRAID 5.10i, 6Gb/s 720i/720ix. 12Gb/s SAS/SATA. 720i needs	Hot-swap parts Noise emissions
7 HIYI II II B Support	cache for RAID 6/60 support. 720ix must have a cache.  Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath	Environmental specification
Disk drive bays	Up to 6 (0-5) or 12 (0-11) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays on 12 x 3.5" models. Rear bay supports SATA drives only	
M.2 SSD module	Optional M.2 module, supports up to 2 optional M.2 SSD drives.  Available on 12 x 3.5" and 720ix models only	Weight
CD modulo		Dimensions
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	
	3.5" SATA 7.2K 6Gbs 1TB/2TB/3TB/4TB/5TB/6TB 3.5" SAS 7.2K 6Gbs 1TB/2TB/3TB/4TB/ 3.5" SAS 7.2K 12Gbs 6TB 2.5" SATA 7.2K 6Gbs 500GB/1TB	0 3 . 1 4 . 2 5
Internal storage	2.5" SAS 12Gbs 200GB/400GB/800GB 3.5" SATA 6Gbs 120GB/240GB/300GB/480GB/600GB/800GB PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB M.2 SSD 80GB/120GB SD SDHC flash card 8GB/32GB	Expansion slots Up to eight half-len Slot 1 (riser card 1) Slot 2 (riser card 1)
Optical drive	Note: SAS drive needs 510i/720i/720ix.  None	Slot 3 (riser card 1)
		Slot 4 (onboard):
Tape drive bays  Network interfaces	None One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots	Slot 5 (riser card 2) Slot 6 (riser card 2)
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	Slot 7 (onboard): Slot 8 (onboard): Note: Slot 1-8 are x8 wire
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	Core Options for 4X70F28589 Thir 4XF0G45881 Thir 4X20F28577 Len
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2	For a list of all supp
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	

Components	opecinication							
Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinuis 200V - 240V, others are 110V - 21100W if the system line input is 10 x 3.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 100-127V. Up to 135W CPU on 550 W and 12						
Graphics	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@	MB memory, one DisplayPort on rear. 60Hz						
Front ports	None							
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)						
Cooling	Six (5+1, dual processors) or four (	3+1, single processor), hot-swap						
Hot-swap parts	Disk drives, power supplies, and fai	ns						
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)						
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package) Note: 45° C continuous operation configuration redundant PSU/no FLFH card/no PCle SSD ac	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing						
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)							
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)							





#### **Expansion slots**

Up to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

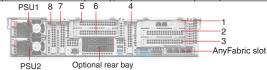
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

								PCle x8		Slots				Chassis			
Type-					Disk		M.2/SD	SSD	Tape	(HL/				intrusion	System	Preloaded	1
model	Processor	2nd CPU	Memory	AnyRAID	Bays	Disk drives	module	adpr	drive	FHFL)	Optical	AnyFabric	TPM	switch	mgmt	os	Power
70D0002BUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28818	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x3.5" HS	Open	No	No	None	3/0	None	No	TPM	No	TSM	No	750Wx1 Platinum

Components	Specification	Components
Form factor	2U rack	
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	Power supply
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	
Chinaat	Up to 2133MHz memory speed. Up to 45MB cache Intel C612 Platform Controller Hub (PCH)	
Chipset	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	Graphics
Memory DIMMs	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Front ports
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Rear ports
	ECC, memory mirroring, lockstep, and memory sparing	Cooling
р. с. с. с.	Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model.	Hot-swap parts
	RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5.	Noise emissions
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	
	cache for RAID 6/60 support. 720ix must have a cache.	Environmental
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro. and FastPath	specification
Distribution to some	Up to 6 (0-5) or 12 (0-11) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-	
Disk drive bays	swap disk drive bays on 12 x 3.5" models. Rear bay supports SATA drives only	
M.2 SSD module	Optional M.2 module, supports up to 2 optional M.2 SSD drives.	Weight
	Available on 12 x 3.5" and 720ix models only	Dimensions
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	Billionolollo
	3.5" SATA 7.2K 6Gbs   1TB/2TB/3TB/4TB/5TB/6TB	
	HDD 3.5" SAS 7.2K 6Gbs 1TB/2TB/3TB/4TB/	0 3
	5.5 SAS 7.2K 12GBS 01B	1 4
	2.5" SATA 7.2K 6Gbs	2 5
Internal storage	2.5 SAS 12Gbs 200GB/400GB/600GB 3.5" SATA 6Gbs 120GB/240GB/300GB/480GB/600GB/800GB	
	SSD 3.5" SATA 6Gbs 120GB/240GB/300GB/480GB/600GB/800GB PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB	Expansion slots
	M.2 SSD 80GB/120GB	Up to eight half-len
	SD SDHC flash card 8GB/32GB	Slot 1 (riser card 1)
Outland distant	Note: SAS drive needs 510i/720i/720ix.	Slot 2 (riser card 1) Slot 3 (riser card 1)
Optical drive	None	Slot 4 (onboard):
Tape drive bays	None	Slot 5 (riser card 2)
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots	Slot 6 (riser card 2) Slot 7 (onboard):
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	Slot 8 (onboard):
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	Note: Slot 1-8 are x8 wire
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	Core Options for
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	4X70F28589 Thir
management	Control Panel LEDs shows the status of power, ID, network, system.	4XF0G45881 Thir
	Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4X20F28577 Len
	System Center Operations Manager, Power Planner	
	Microsoft Windows Server 2012 R2, 2012, and 2008 R2,	4X90F92980 Thir
Operating systems	Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5,	For a list of all supp
supported	SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2	
Base warranty	3-year limited onsite service with 9x5/NBD.	
Daso warranty	Some parts are Customer Replaceable Units	

Components	Specification							
Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinus 200V - 240V, others are 110V - 21100W if the system line input is 10 x 3.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 100-127V. Up to 135W CPU on 550 W and 12						
Graphics	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@	MB memory, one DisplayPort on rear. 60Hz						
Front ports	None							
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)						
Cooling	Six (5+1, dual processors) or four (	3+1, single processor), hot-swap						
Hot-swap parts	Disk drives, power supplies, and fa	ns						
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)						
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package) Note: 45° C continuous operation configuration redundant PSU/no FLFH card/no PCle SSD ac	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing						
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)							
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)							



#### **Expansion slots**

Up to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

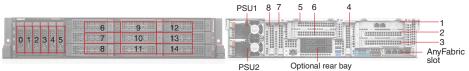
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type-					Disk		M.2/SD	PCIe x8 SSD	Slots (HL/		Tane	Discrete		Chassis	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module		(	Optical		ethernet			mgmt	OS	wty	Power
70D4000CUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D4000DUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28817	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D4000EUX	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D4000FUX	1xE5-2690 v3 12C/2.6GHz/ 30MB/135W/2133MHz	4XG0F28811	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-VAAr	1100Wx1 Platinum

Components	Specification
Form factor	2U rack
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache
Chipset	Intel C612 Platform Controller Hub (PCH)
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)
Memory protection	ECC, memory mirroring, lockstep, and memory sparing
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720ix, 12Gb/s SAS/SATA. Cahce is needed. Optional cache: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath
Disk drive bays	Up to $6 \times 2.5$ " (0-5) and 12 (6-14) 3.5" hot-swap disk drive bays. Up to $2 \times 2.5$ " rear hot-swap disk drive bays. Rear bay supports SATA drives only
M.2 SSD	Optional M.2 module, supports up to 2 optional M.2 SSD drives
SD module	Optional SD module, supports up to 2 optional SDHC flash cards
Internal storage	3.5" SATA 7.2K 6Gbs 1TB/2TB/3TB/4TB/5TB/6TB 3.5" SAS 7.2K 6Gbs 1TB/2TB/3TB/4TB/ 3.5" SAS 7.2K 12Gbs 6TB 2.5" SATA 7.2K 6Gbs 500GB/1TB 2.5" SAS 10K 6Gbs 300GB/600GB/900GB/1.2TB 2.5" SAS 15K 6Gbs 300GB/450GB/600GB
mtemai storage	2.5" SAS 12Gbs* 200GB/400GB/800GB 2.5" SATA 6Gbs* 120GB/240GB/300GB/480GB/600GB/800GB PCle 2.0 x8 SSD adapter 1.6TB/3.2TB M.2 SSD 80GB/120GB
Ontical drive	SD   SDHC flash card   8GB/32GB
Optical drive Tape drive bays	None None
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsof System Center Operations Manager, Power Planner
Operating systems supported	Microsoft Windows Server 2012 Ř2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units

Components	Specification								
Power supply	Up to two redundant hot-swap 750 supplies. 550 W, 1100 W, and 1600 W is 80 PLUS Platinum or Titanium others are 110V - 240V.	W are 80 PLUS Platinum qualified	d, 750						
Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz							
Front ports	Two USB 2.0, one DisplayPort.								
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one seria	ıl (9-pin)						
Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap								
Hot-swap parts	Disk drives, power supplies, and far	ns							
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)							
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing							
	Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.								
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)								
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)								



Up to eight half-length PCle 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

#### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

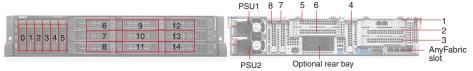
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

								PCIe x8	Slots					Chassis				
Type-					Disk		M.2/SD	SSD	(HL/		Tape	Discrete		intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70D4001RUX	1xE5-2603 v3 6C/1.6GHz/	4XG0F28821	1x8GB 2133MHz	720ix	6+9	Open	No	No	0/0	None	None	No	ТРМ	No	TSM	No	2 voor	750Wx1
70D4001h0X	15MB/85W/1600MHz	4AGUF20021	RDIMM	+1GB RAM	HS	Open	INO	INO	0/0	None	None	INO	I F IVI	INO	I SIVI	INO	3-year	Platinum

Components	Specification
Form factor	2U rack
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache
Chipset	Intel C612 Platform Controller Hub (PCH)
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)
Memory protection	ECC, memory mirroring, lockstep, and memory sparing
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720ix, 12Gb/s SAS/SATA.  Cahce is needed. Optional cache: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath
Disk drive bays	Up to 6 x 2.5" (0-5) and 12 (6-14) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays. Rear bay supports SATA drives only
M.2 SSD	Optional M.2 module, supports up to 2 optional M.2 SSD drives
SD module	Optional SD module, supports up to 2 optional SDHC flash cards
Internal storage	3.5" SATA 7.2K 6Gbs   1TB/2TB/3TB/4TB/5TB/6TB   3.5" SAS 7.2K 6Gbs   1TB/2TB/3TB/4TB/
Ç	2.5" SAS 12Gbs* 200GB/400GB/800GB 2.5" SATA 6Gbs* 120GB/240GB/300GB/480GB/600GB/800GB PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB M.2 SSD 80GB/120GB
0 11 1 11	SD   SDHC flash card   8GB/32GB
Optical drive	None
Tape drive bays	None
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsofi System Center Operations Manager, Power Planner
Operating systems supported	Microsoft Windows Server 2012 Ř2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units

Components	Specification								
Power supply	supplies. 550 W, 1100 W, and 1600 W is 80 PLUS Platinum or Titanium	W ac or 1100 W ac or 1600 W ac power W are 80 PLUS Platinum qualified, 750 in qualified. 750 W Titanium is 200V - 240V, Il automatically operate in 1100W if the							
Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear.  Maximum resolution: 1920x1200@60Hz							
Front ports	None								
Rear ports	One DisplayPort, two USB 3.0, one	e RJ-45 (dedicate mgmt), one serial (9-pin)							
Cooling	Six (5+1, dual processors) or four (	Six (5+1, dual processors) or four (3+1, single processor), hot-swap							
Hot-swap parts	Disk drives, power supplies, and fa	Disk drives, power supplies, and fans							
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)							
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing							
NA/a talah	Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.								
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)								
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)								



Up to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCle x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCIe Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

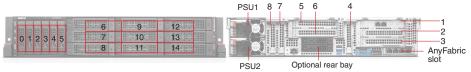
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

									PCIe x8		Slots				Chassis			
-	Type-					Disk		M.2/SD	SSD	Tape	(HL/				intrusion	System	Preloaded	
	model	Processor	2nd CPU	Memory	AnyRAID	Bays	Disk drives	module	adpr	drive	FHFL)	Optical	AnyFabric	TPM	switch	mgmt	os	Power
70D4		1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	720ix+1GB RAM	6+9 HS	Open	No	No	None	3/0	None	No	TPM	No	TSM	No	750Wx1 Platinum

Components	Specification									
Form factor	2U rack									
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache									
Chipset	Intel C612 Platform Controller Hub (PCH)									
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz									
Memory capacity	4GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)									
Memory protection	ECC, memory mirroring, lockstep, and memory sparing									
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720ix, 12Gb/s SAS/SATA. Cahce is needed. Optional cache: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath									
Disk drive bays	Up to $6 \times 2.5$ " (0-5) and 12 (6-14) 3.5" hot-swap disk drive bays. Up to $2 \times 2.5$ " rear hot-swap disk drive bays. Rear bay supports SATA drives only									
M.2 SSD	Optional M.2 module, supports up to 2 optional M.2 SSD drives									
SD module	Optional SD module, supports up to 2 optional SDHC flash cards									
Internal storage	3.5" SATA 7.2K 6Gbs 1TB/2TB/3TB/4TB/5TB/6TB 3.5" SAS 7.2K 6Gbs 1TB/2TB/3TB/4TB/ 3.5" SAS 7.2K 12Gbs 6TB 2.5" SATA 7.2K 6Gbs 500GB/1TB 2.5" SAS 10K 6Gbs 300GB/600GB/900GB/1.2TB 2.5" SAS 15K 6Gbs 300GB/450GB/600GB									
internal storage	2.5" SAS 12Gbs* 200GB/400GB/800GB 2.5" SATA 6Gbs* 120GB/240GB/300GB/480GB/600GB/800GB PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB M.2 SSD 80GB/120GB									
Outline Labeline	SD SDHC flash card 8GB/32GB									
Optical drive	None									
Tape drive bays Network interfaces	None One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots									
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch									
Systems management	Energy Manager, System Manager, Power Planner  System Center Operations Manager, Power Planner  Microsoft Windows Server, 2012, 82, 2012, and 2008, 82									
Operating systems supported	Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2									
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units									

Components	Specification									
Power supply	Up to two redundant hot-swap 750 W ac or 1100 W ac or 1600 W ac p supplies. 550 W, 1100 W, and 1600 W are 80 PLUS Platinum qualified W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V others are 110V - 240V. 1600 W will automatically operate in 1100W if system line input is 100-127V.									
Graphics Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on real Maximum resolution: 1920x1200@60Hz										
Front ports	None									
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)								
Cooling	Six (5+1, dual processors) or four (	Six (5+1, dual processors) or four (3+1, single processor), hot-swap								
Hot-swap parts	Disk drives, power supplies, and fa	ns								
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)								
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing								
	Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.									
Weight	Minimum configuration: 16 kg (35.3									
Dimensions	Height: 87 mm (3.4 in), width: 482 i	mm (19 in), depth: 764 mm (30 in)								



Up to eight half-length PCle 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCle x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type-					Disk		M.2/SD	PCIe x8 SSD	Slots (HL/		Таре	Discrete		Chassis intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70DR000QUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28820	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR000RUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR000SUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28817	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum

Components	Spec	ification									
Form factor	2U ra										
			2600 v3 family processors with 18 cores up to	$\neg$							
			, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,								
Processor	10 cc	ores up to 2.6GHz, 8 cores	up to 3.2GHz, 6 cores up to 3.4GHz,								
		es up to 3.5GHz. Two QPI									
	Up to	2133MHz memory speed	. Up to 45MB cache								
Chipset	Intel	C612 Platform Controller F	lub (PCH)								
Memory DIMMs			er processor), 8-channel capable (4-channel per								
INTERTIOR DITIVITY	proce	ocessor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz									
Memory capacity	384G	4GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)									
Memory protection	ECC.	CC, memory mirroring, lockstep, and memory sparing									
	Supp	upports AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.									
	RAID	0, 1, 10 with AnyRAID 510	i, 6Gb/s SAS/SATA, optional key for RAID 5/50.								
	RAID	0, 1, 10, 5, 50, 6, 60 with	ÁnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i nee	ds							
AnyRAID support	cache	e for RAID 6/60 support. 72	20ix must have a cache.								
			GB read-only memory. 1GB/2GB/4GB flash with	- [							
			nclude CacheVault, CacheCade Pro, and FastPath	۱. 📙							
	Also	supports AnyRAID 110i or	no front bay model, RAID 0 or 1								
Disk drive bays	Up to	8 (0-7), 16 (0-15) or 24 (0	-23) 2.5" hot-swap disk drive bays. Up to 2 x 2.5"	. [							
Disk drive bays			odels, hot-swap. Rear bay supports SATA drives or								
M.2 SSD			up to 2 optional M.2 SSD drives, no front bay mod	iel							
		110i or 8/16/24 x 2.5" mod									
SD module	Optio	nal SD module, supports ι	up to 2 optional SDHC flash cards								
		2.5" SATA 7.2K 6Gbs - HS	500GB/1TB	- [							
	HDD	2.5" SAS 10K 6Gbs - HS	300GB/600GB/900GB/1.2TB								
	טטוו	2.5" SAS 15K 6Gbs - HS	300GB/450GB/600GB								
		2.5" SAS 12Gbs - HS 200GB/400GB/800GB									
	SSD	2.5" SATA 6Gbs - HS   120GB/240GB/300GB/480GB/600GB/800GB									
Internal storage	330	PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB									
		M.2 SSD	80GB/120GB								
	SD	SDHC flash card	8GB/32GB								
		LTO-6 SAS 6Gbs	2.5TB								
			SSD can not be supported simultaneously, only one device can be								
Optical drive	Optio	ed per system.	rive on 8/16 x 2.5" model, DVD-ROM or DVD±RW								
				$\dashv$							
Tape drive bays			nal SAS tape drive on 8 x 2.5" and 720ix model.								
Network interfaces			rt, one AnyFabric slot for customized LOM. Discre	te							
		ork options is also available		$\dashv$							
Security features			sword. Optional Trusted Platform Module (TCG	_							
		ompliant). Optional chassis	Manager (TSM), optional TSM Premium.	$\dashv$							
			00 graphics/management processor,								
			nanagement controller (BMC).								
Systems											
management	Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager,										
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft										
	Syste	em Center Operations Man	ager Power Planner	انات							
	Micro	soft Windows Server 2012	B2 2012 and 2008 B2								
Operating systems	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5,										
supported	CLICE Linux Enterprise Corner 11 VM were vCnhore (ECV) F. F. LIO										
		ir limited onsite service wit		-							
Base warranty		e parts are Customer Repla									

	Components	Specification									
	Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinu is 200V - 240V, others are 110V - 2: 1100W if the system line input is 10 or 135W CPU with 16 DIMMs on 55 supported on 24 x 2.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 10-127V. Up to 105W CPU with 24 DIMMs 50 W and 16 x 2.5" model. 550 W is not								
1	Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz								
1	Front ports	Two USB 2.0, one DisplayPort									
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)								
1	Cooling	Six (5+1, dual processors) or four (3	processors) or four (3+1, single processor), hot-swap								
ı	Hot-swap parts	Disk drives, power supplies, and far	ns								
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)								
′	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package) Note: 45 ° C continuous operation configuration redundant PSU/no FLFH card/no PCle SSD ad	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing								
1	Weight	Minimum configuration: 16 kg (35.3									
4	Dimensions	Height: 87 mm (3.4 in), width: 482 n									
П		DOLLA	0.7 5.6 4								

PSU1 AnyFabric Optional rear bay PSU<sub>2</sub>

#### **Expansion slots**

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	M.2/SD module	PCle x8 SSD adpr	Slots (HL/ FHFL)	Optical		Discrete ethernet			System mgmt	Preloaded OS	Base wty	Power
70DR002KUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28818	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	No	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR002LUX	2xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	-	2x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	6/0	No	No	No	ТРМ	No	TSM	No	3-year	1100Wx1 Platinum
70DR002MUX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	No	No	No	TPM	No	TSM	No	3-year	750Wx1 Platinum

Components	Spec	ification	Components	Specification				
Form factor	2U ra	ck		Up to two redu				
Processor	Up to 2.3GI 10 co 4 cor Up to	two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to Iz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, res up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, es up to 3.5GHz. Two QPI link up to 9.6 GT/s. 2133MHz memory speed. Up to 45MB cache	Power supply	ac power supp qualified, 750 V is 200V - 240V 1100W if the s or 135W CPU				
Chipset		C612 Platform Controller Hub (PCH)		supported on 2				
Memory DIMMs	proce	MM sockets (12 DIMMs per processor), 8-channel capable (4-channel per ssor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Graphics	Onboard Aspe DisplayPort on				
Memory capacity		B (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Front ports	Two USB 2.0,				
Memory protection		memory mirroring, lockstep, and memory sparing	Rear ports	One DisplayPo				
Amur Al Davis and	RAID RAID	orts AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model. 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	Cooling Hot-swap parts Noise emissions	Six (5+1, dual Disk drives, po Operating: < 6.				
AnyRAID support	Optio super Also	e for RAID 6/60 support. 720ix must have a cache. nal cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. supports AnyRAID 110i on no front bay model, RAID 0 or 1	Environmental specification	Temperature - oper Temperature - non Temperature - non Altitude - operating Humidity - operatin				
Disk drive bays	rear o	8 (0-7), 16 (0-15) or 24 (0-23) 2.5" hot-swap disk drive bays. Up to 2 x 2.5" lisk drive bays on 720ix models, hot-swap. Rear bay supports SATA drives only	'	Humidity - storage  Note: 45 ° C continu				
M.2 SSD	with 1	nal M.2 module, supports up to 2 optional M.2 SSD drives, no front bay model 10i or 8/16/24 x 2.5" model with 720ix only	Weight	redundant PSU/no Minimum confi				
SD module	Optio	nal SD module, supports up to 2 optional SDHC flash cards	Dimensions	Height: 87 mm				
Internal storage	HDD SSD	2.5" SATA 7.2K 6Gbs - HS       500GB/1TB         2.5" SAS 10K 6Gbs - HS       300GB/600GB/900GB/1.2TB         2.5" SAS 15K 6Gbs - HS       300GB/450GB/600GB         2.5" SAS 12Gbs - HS       200GB/400GB/800GB         2.5" SATA 6Gbs - HS       120GB/240GB/300GB/480GB/600GB/800GB         PCIe 2.0 x8 SSD adapter       1.6TB/3.2TB	0 4 1 5 2 6 3 7	8 12 16 9 13 17 10 14 18				
		M.2 SSD   80GB/120GB     SDHC flash card   8GB/32GB     LTO-6 SAS 6Gbs   2.5TB     ape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	Expansion slots Up to eight half-length PCle 3.0 depending on the riser cards and					
	selecte	d per system.	Slot 1 (riser card 1)					
Optical drive		nal one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	Slot 2 (riser card 1) Slot 3 (riser card 1)					
Tape drive bays  Network interfaces	One	orts up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model. dedicated management port, one AnyFabric slot for customized LOM. Discrete	Slot 4 (onboard): Slot 5 (riser card 2)	PCIe 3.0 x 16,				
Security features	Powe	ork options is also available via PCIe slots r-on and administrator password. Optional Trusted Platform Module (TCG compliant). Optional chassis intrusion switch	Slot 6 (riser card 2) Slot 7 (onboard):					
Systems management	Supp UEFI IPMI Contr Supp Energ	Slot 8 (onboard): Slots 1 and 2 can b Slots 5 and 6 can b Note: 1. Slot 1-8 are x8 w model needs 1600 W PS Core Options for 4X70F28589 Thii	PCIe 3.0 x 16, pe replaced with one replaced with one replaced with one replaced. 2. One full size PCIe x10 ThinkServer RE					
Operating systems supported	Micro Windo SUSE	m Center Operations Manager, Power Planner soft Windows Server 2012 R2, 2012, and 2008 R2, ows Small Business Server 2011, Red Hat Enterprise Linux 6.5, Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2	4X20F28577 Lenovo ThinkS 4XF0G45867 ThinkServer S 4X90F92980 ThinkServer D					
Base warranty	Sóme	r limited onsite service with 9x5/NBD. parts are Customer Replaceable Units rights reserved.	For a list of all sup					

	Components	Specification										
	Power supply	Up to two redundant hot-swap 550 V ac power supplies. 550 W, 1100 W, a qualified, 750 W is 80 PLUS Platinu is 200V - 240V, others are 110V - 24 1100W if the system line input is 10 or 135W CPU with 16 DIMMs on 55 supported on 24 x 2.5" model	and 1600 W are 80 PLUS Platinum m or Titanium qualified. 750 W Tita 40V. 1600 W will automatically ope 0-127V. Up to 105W CPU with 24 I 00 W and 16 x 2.5" model. 550 W is	n anium rate in DIMMs s not								
	Graphics	Onboard Aspeed AST2400 with 16M DisplayPort on rear. Maximum resol		ont, one								
1	Front ports	Two USB 2.0, one DisplayPort										
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial	l (9-pin)								
1	Cooling	Six (5+1, dual processors) or four (3	3+1, single processor), hot-swap									
	Hot-swap parts	Disk drives, power supplies, and fan	ns									
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)									
,	Environmental specification	Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating		nrd/								
	Weight	Minimum configuration: 16 kg (35.3										
4	Dimensions	Height: 87 mm (3.4 in), width: 482 m										
١		DCIII	87 56 4									

PSU1 AnyFabric Optional rear bay PSU<sub>2</sub>

#### Expansion slots

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCle 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

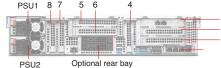
4XF0G45867 ThinkServer System Manager Premium (TSM Premium) 4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays		M.2/SD module	PCle x8 SSD adpr	Tape	Slots (HL/ FHFL)	Optical	AnyFabric		Chassis intrusion switch	System mgmt	Preloaded OS	Power
70DR002SUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	No	3/0	No	No	TPM	No	TSM	No	750Wx1 Platinum
	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	2x8GB 2133MHz RDIMM	720i+1GB RAM	8x2.5" HS	2x300GB 2.5" SAS6Gbs 10K	No	No	No	3/0	No	GbEx4 RJ-45	TPM	No	TSM Premium	No	750Wx2 Platinum

Components	Snec	ification								
Form factor	-									
Form factor	2U ra									
		two <b>145W Intel Xeon E5-2600 v3</b> family processors with 18 cores up to Hz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,								
Processor	10 co	res up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,								
		es up to 3.5GHz. Two QPI link up to 9.6 GT/s.								
		2133MHz memory speed. Up to 45MB cache								
Chipset		C612 Platform Controller Hub (PCH)								
· ·		MM sockets (12 DIMMs per processor), 8-channel capable (4-channel per								
Memory DIMMs		ssor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz								
Memory capacity		B (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)								
		memory mirroring, lockstep, and memory sparing								
momery protoculors	Supp	orts AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.								
		0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.								
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs									
AnyRAID support		e for RAID 6/60 support. 720ix must have a cache.								
' ''		nal cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with								
		capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.								
	Also supports AnyRAID 110i on no front bay model, RAID 0 or 1									
Diek drive hove		8 (0-7), 16 (0-15) or 24 (0-23) 2.5" hot-swap disk drive bays. Up to 2 x 2.5"								
Disk drive bays	rear c	lisk drive bays on 720ix models, hot-swap. Rear bay supports SATA drives only								
M.2 SSD	Optio	nal M.2 module, supports up to 2 optional M.2 SSD drives, no front bay model								
IVI.2 33D	with 1	10i or 8/16/24 x 2.5" model with 720ix only								
SD module	Optio	nal SD module, supports up to 2 optional SDHC flash cards								
		2.5" SATA 7.2K 6Gbs - HS								
		2.5" SAS 10K 6Gbs - HS								
	HDD	2.5" SAS 15K 6Gbs - HS 300GB/450GB/600GB								
		2.5" SAS 12Gbs - HS 200GB/400GB/800GB								
	000	2.5" SATA 6Gbs - HS 120GB/240GB/300GB/480GB/600GB/800GB								
Internal storage	SSD	PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB								
		M.2 SSD 80GB/120GB								
	SD	SDHC flash card 8GB/32GB								
		LTO-6 SAS 6Gbs 2.5TB								
		ape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be								
	selecte	d per system.								
Optical drive		nal one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW								
Tape drive bays		orts up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.								
Network interfaces		dedicated management port, one AnyFabric slot for customized LOM. Discrete								
TTOTWOTK IIITOTIAGGG		ork options is also available via PCIe slots								
Security features		r-on and administrator password. Optional Trusted Platform Module (TCG								
		ompliant). Optional chassis intrusion switch								
	Supp	orts ThinkServer System Manager (TSM), optional TSM Premium.								
		Onboard Aspeed AST2400 graphics/management processor,								
Systems		2.0-compliant baseboard management controller (BMC).								
management		ol Panel LEDs shows the status of power, ID, network, system.								
	Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft									
		System Center Operations Manager, Power Planner								
		soft Windows Server 2012 R2, 2012, and 2008 R2,								
Operating systems										
supported	Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2									
		r limited onsite service with 9x5/NBD.								
Base warranty		parts are Customer Replaceable Units								
© Convright Langua 00										
© Copyright Lenovo 2014. All rights reserved.										

	Components	Specification									
	Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinu is 200V - 240V, others are 110V - 2: 1100W if the system line input is 10 or 135W CPU with 16 DIMMs on 55 supported on 24 x 2.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 10-127V. Up to 105W CPU with 24 DIMMs 50 W and 16 x 2.5" model. 550 W is not								
1	Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz								
1	Front ports	Two USB 2.0, one DisplayPort									
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)								
1	Cooling	Six (5+1, dual processors) or four (3	processors) or four (3+1, single processor), hot-swap								
ı	Hot-swap parts	Disk drives, power supplies, and far	ns								
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)								
′	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package) Note: 45 ° C continuous operation configuration redundant PSU/no FLFH card/no PCle SSD ad	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing								
1	Weight	Minimum configuration: 16 kg (35.3									
4	Dimensions	Height: 87 mm (3.4 in), width: 482 n									
П		DOLLA	0.7 5.6 4								





#### **Expansion slots**

Components

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

#### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

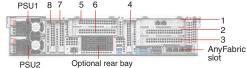
4X90F92980 ThinkServer DisplayPort to VGA Dongle For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

								PCle x8						Chassis				
Type-					Disk		M.2/SD	SSD	(HL/		Tape	Discrete		intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70DT000CUX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	720ix +1GB Flash	16x2.5" HS	Open	No	No	0/0	No	No	No	ТРМ	No	TSM	No	3-year	750Wx1 Platinum

Components	Spec	ification	Components
Form factor	2U ra	ck	
		two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	1
		Hz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	
Processor		res up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	Power supply
		es up to 3.5GHz. Two QPI link up to 9.6 GT/s.	
Ola in a sat		2133MHz memory speed. Up to 45MB cache	-
Chipset		C612 Platform Controller Hub (PCH)	4
Memory DIMMs		MM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	Graphics
Mamaricaanaaitic		ssor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Front ports
Memory capacity		B (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Rear ports
iviernory protection	EUU,	memory mirroring, lockstep, and memory sparing orts AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.	Cooling
		0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	Hot-swap parts
		0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	
AnyRAID support		e for RAID 6/60 support. 720ix must have a cache.	INDISC CITISSIONS
,,		nal cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with	
		capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	
		supports AnyRAID 110i on no front bay model, RAID 0 or 1	Environmental
Disk drive bays		8 (0-7), 16 (0-15) or 24 (0-23) 2.5" hot-swap disk drive bays. Up to 2 x 2.5"	specification
DISK UTIVE Days	rear o	lisk drive bays on 720ix models, hot-swap. Rear bay supports SATA drives only	
M.2 SSD		nal M.2 module, supports up to 2 optional M.2 SSD drives, no front bay model	]
		10i or 8/16/24 x 2.5" model with 720ix only	Weight
SD module	Optio	nal SD module, supports up to 2 optional SDHC flash cards	Dimensions
		2.5" SATA 7.2K 6Gbs - HS 500GB/1TB	
	HDD	2.5" SAS 10K 6Gbs - HS 300GB/600GB/900GB/1.2TB	
	1100	2.5" SAS 15K 6Gbs - HS 300GB/450GB/600GB	0 4 4
		2.5" SAS 12Gbs - HS 200GB/400GB/800GB	2 4 6 6
Internal storage	SSD	2.5" SATA 6Gbs - HS 120GB/240GB/300GB/480GB/600GB/800GB	3 7
Internal Storage	002	PCIe 2.0 x8 SSD adapter 1.6TB/3.2TB	
		M.2 SSD 80GB/120GB	<b>Expansion slots</b>
	SD	SDHC flash card 8GB/32GB	Up to eight half-ler
		LTO-6 SAS 6Gbs 2.5TB  ape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	depending on the
	selecte	d per system.	Slot 1 (riser card 1
Optical drive	Optio	nal one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	Slot 2 (riser card 1
Tape drive bays	Supp	orts up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.	Slot 3 (riser card 1
Network interfaces	One	dedicated management port, one AnyFabric slot for customized LOM. Discrete	Slot 4 (onboard):
inetwork interfaces	netwo	ork options is also available via PCIe slots	Siors (riser card 2
Security features		r-on and administrator password. Optional Trusted Platform Module (TCG	Slot 6 (riser card 2 Slot 7 (onboard):
occurry routered		ompliant). Optional chassis intrusion switch	Slot 8 (onboard):
		orts ThinkServer System Manager (TSM), optional TSM Premium.	Slots 1 and 2 can b
		Onboard Aspeed AST2400 graphics/management processor,	Slots 5 and 6 can b
Systems		2.0-compliant baseboard management controller (BMC). ol Panel LEDs shows the status of power, ID, network, system.	Note: 1. Slot 1-8 are x8 w
management		orts ThinkServer management software: Diagnostics, Deployment Manager,	model needs 1600 W PS
		by Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	Coro Ontions for
		m Center Operations Manager, Power Planner	
	Micro	soft Windows Server 2012 R2, 2012, and 2008 R2,	4X70F28589 Thi
Operating systems		ows Small Business Server 2011, Red Hat Enterprise Linux 6.5,	4X20F28577 Ler
supported		E Linux Enterprise Server 11, VMware vSphere (ESXi) 5.5 U2	4XF0G45867 Thi 4X90F92980 Thi
Page Warrants	3-yea	r limited onsite service with 9x5/NBD.	
Base warranty © Copyright Lenovo 2	Sóme	parts are Customer Replaceable Units	For a list of all sup
© Copyrigin Lenovo 2	014. AI	rigina reserveu.	

	Components	Specification							
	Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac power supplies. 550 W, 1100 W, and 1600 W qualified, 750 W is 80 PLUS Platinum or Titaniur is 200V - 240V, others are 110V - 240V. 1600 W 1100W if the system line input is 100-127V. Up to or 135W CPU with 16 DIMMs on 550 W and 16 supported on 24 x 2.5" model	are 80 PLUS Platinum n qualified. 750 W Titanium will automatically operate in 0 105W CPU with 24 DIMMs x 2.5" model. 550 W is not						
1	Graphics	Onboard Aspeed AST2400 with 16MB memory, DisplayPort on rear. Maximum resolution: 1920x							
1	Front ports	Two USB 2.0, one DisplayPort							
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedic	ate mgmt), one serial (9-pin)						
1	Cooling	Six (5+1, dual processors) or four (3+1, single pr	ocessor), hot-swap						
	Hot-swap parts	Disk drives, power supplies, and fans	•						
;	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum c	onfiguration)						
/	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  Note: 45 ° C continuous operation configuration limitation: no 135 redundant PSU/no FLFH card/no PCIe SSD adapter.	0-10000ft (0-3048m) ondensing ondensing						
╛	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)							
4	Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), de							
П		DOLL 0.7 F. 6	. ,						





#### Expansion slots

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots,

depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 4 (onboard):

Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCle 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

#### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

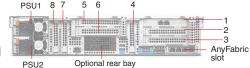
4X90F92980 ThinkServer DisplayPort to VGA Dongle

							1	PCle x8						Chassis				
Type-					Disk		M.2/SD	SSD	(HL/		Tape	Discrete		intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70D20024UX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No	No	0/0	No	No	No	ТРМ	No	TSM	No		750Wx1 Platinum

Components	•	ification		Components
Form factor	2U ra			
Processor	2.3Gl 10 co 4 core Up to	Hz, 16 cores up to 2.3GHz. res up to 2.6GHz, 8 cores es up to 3.5GHz. Two QPI 2133MHz memory speed.	. Up to 45MB cache	Power supply
Chipset		C612 Platform Controller H		
Memory DIMMs	24 DI proce	MM sockets (12 DIMMs persor). RDIMM and LRDIM	er processor), 8-channel capable (4-channel per M (cannot be intermixed), DDR4, up to 2133MHz	Graphics
Memory capacity			88GB (LRDIMM, 32GB x 24)	Front ports
Memory protection	ECC,	memory mirroring, lockste	ep, and memory sparing	Rear ports
AnyRAID support	RAID RAID cache Optio super	0, 1, 10 with AnyRAID 510i 0, 1, 10, 5, 50, 6, 60 with 2 e for RAID 6/60 support. 72 nal cache for 720i/720ix: 1' capacitor. Flash options ir	on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model. i, 6Gb/s SAS/SATA, optional key for RAID 5/50. AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs 20ix must have a cache. GB read-only memory. 1GB/2GB/4GB flash with nolude CacheVault, CacheCade Pro, and FastPath. In of front bay model, RAID 0 or 1	Cooling Hot-swap parts Noise emission Environmental
Disk drive bays	Up to rear c	8 (0-7), 16 (0-15) or 24 (0- disk drive bays on 720ix mo	-23) 2.5" hot-swap disk drive bays. Up to 2 x 2.5" odels, hot-swap. Rear bay supports SATA drives only	specification
M.2 SSD	Optio with 1	nal M.2 module, supports ( I 10i or 8/16/24 x 2.5" mode	up to 2 optional M.2 SSD drives, no front bay model el with 720ix only	Weight
SD module	Optio	nal SD module, supports u	up to 2 optional SDHC flash cards	Dimensions
Internal storage	Note: Ta	2.5" SATA 7.2K 6Gbs - HS 2.5" SAS 10K 6Gbs - HS 2.5" SAS 15K 6Gbs - HS 2.5" SAS 15K 6Gbs - HS 2.5" SATA 6Gbs - HS PCIe 2.0 x8 SSD adapter M.2 SSD SDHC flash card LTO-6 SAS 6Gbs ape drive, rear disk drive, and M.2 Sd per system.	500GB/1TB 300GB/600GB/900GB/1.2TB 300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/800GB 1.6TB/3.2TB 80GB/120GB 80GB/120GB 2.5TB SSD can not be supported simultaneously, only one device can be	Expansion slo Up to eight half-depending on the Slot 1 (riser care
Optical drive			rive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	Slot 2 (riser care
Tape drive bays			nal SAS tape drive on 8 x 2.5" and 720ix model.	Slot 3 (riser care
Network interfaces	One one	dedicated management po ork options is also available	ort, one AnyFabric slot for customized LOM. Discrete	Slot 4 (onboard Slot 5 (riser card Slot 6 (riser card
Security features		ompliant). Optional chassis		Slot 7 (onboard
Systems management	Supporting	orts ThinkServer System N. Onboard Aspeed AST240 2.0-compliant baseboard n ol Panel LEDs shows the s orts ThinkServer managen	Manager (TSM), optional TSM Premium. D0 graphics/management processor, management controller (BMC). status of power, ID, network, system. nent software: Diagnostics, Deployment Manager, iger, Partner Pack for VMware vCenter and Microsoft	
Operating systems supported	Micro Windo SUSE	soft Windows Server 2012 ows Small Business Serve E Linux Enterprise Server 1	PR2, 2012, and 2008 R2, or 2011, Red Hat Enterprise Linux 6.5, 11, VMware vSphere (ESXi) 5.5 U2	4X70F28589 4X20F28577 4XF0G45867 4X90F92980
Base warranty	Sóme	r limited onsite service with parts are Customer Repla		For a list of all s
© Copyright Lenovo 20	014. All	rights reserved.		

ш	Components	opcomoduon	
	Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinuis 200V - 240V, others are 110V - 21100W if the system line input is 10 or 135W CPU with 16 DIMMs on 58 supported on 24 x 2.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum Im or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 100-127V. Up to 105W CPU with 24 DIMMs 50 W and 16 x 2.5" model. 550 W is not
1	Graphics	Onboard Aspeed AST2400 with 16 DisplayPort on rear. Maximum reso	MB memory, one DisplayPort on front, one lution: 1920x1200@60Hz
1	Front ports	Two USB 2.0, one DisplayPort	
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)
1	Cooling	Six (5+1, dual processors) or four (	3+1, single processor), hot-swap
ı	Hot-swap parts	Disk drives, power supplies, and fai	ns
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)
,	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  Note: 45 ° C continuous operation configuration redundant PSU/no FLFH card/no PCIe SSD ac	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing Ilmitation: no 135W or 145W CPU/no GPU card/
1	Weight	Minimum configuration: 16 kg (35.3	
1	Dimensions	Height: 87 mm (3.4 in), width: 482 r	
ı			9.7 5.6 4





#### Expansion slots

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 4 (onboard):

Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

#### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

## ThinkServer RD650 - Relationship

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	M.2/SD module	PCle x8 SSD adpr	(HL/	Optical	Tape drive	Discrete ethernet	ТРМ		System mgmt	Preloaded OS	Base wty	Power
Announced S	eptember 2014																	
70D10000US	2xE5-2690 v3 12C/2.6GHz/ 30MB/135W/2133MHz	-	2x16GB 2133MHz RDIMM	AnyRAID720ix +4GB Flash	12x3.5" HS+ 2x2.5" HS	Front: 3x1TB 3.5" SAS 7.2K HS +3x2TB 3.5" SAS 7.2K HS +3x3TB 3.5" SAS 7.2K HS +3x4TB 3.5" SAS 7.2K HS Rear: 2x500GB 2.5" SATA 7.2K HS	No	1.6TB	8/0	None	None	16GbEx2 FC +10GbEx2 SFP+ +10GbEx2 RJ45	TPM	Switch	TSM Premium	2012R2 DC	1-year	750Wx2 Titanium
70D10007UX	2xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	-	8x16GB 2133MHz RDIMM	AnyRAID720ix +1GB RAM	12x3.5" HS	4x1TB 3.5" SATA 7.2K HS	No	No	8/0	None	None	Optional	No	No	TSM	No	3-year	1100Wx1 Platinum
70D30000US	2xE5-2680 v3 12C/2.5GHz/ 30MB/120W/2133MHz	-	24x8GB 2133MHz RDIMM	AnyRAID720ix +1GB Flash	24x2.5" HS	24x600GB 2.5" SAS 10K HS	No	1.6TB	4/2	None	None	8GbEx4 FC+GbEx2	TPM	Switch	TSM Premium	2012R2 DC	1-year	1600Wx2 Platinum
70D50000US	2xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	-	8x8GB 2133MHz RDIMM+8x16GB 2133MHz RDIMM	AnyRAID720ix +1GB Flash	6+9 HS	Front: 6x900GB 2.5" SAS 10K HS +9x1TB 3.5" SAS 7.2K HS Rear: 2x500GB 2.5" SATA 7.2K HS	No	1.6TB	8/0	None	None	10GbEx2 RJ45+GbEx2 RJ45+GbEx4 RJ45	ТРМ	No	TSM Premium	2012R2 ESS	1-year	1100Wx2 Platinum
70D50001UX	2xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	-	8x16GB 2133MHz RDIMM	AnyRAID720ix +1GB RAM	6+9 HS	4x240GB SATA SSD HS +6x2TB 3.5" SATA 7.2K HS	No	No	8/0	None	None	10GbEx2 RJ45	No	No	TSM	No	3-year	1100Wx1 Platinum
70DS0000US	2xE5-2660 v3 10C/2.6GHz/ 25MB/105W/2133MHz	-	4x16GB 2133MHz RDIMM+4x8GB 2133MHz RDIMM	AnyRAID510i +key	8x2.5" HS	4x300GB 2.5" SAS 10K HS +4x600GB 2.5" SAS 15K HS	No	3.2TB	8/0	DVD±RW	No	10GbEx4 SFP+ +40GbEx1 QSFP+	TPM	No	TSM Premium	2012R2 STD	1-year	550Wx2 Platinum
70DS0001UX	2xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	-	8x8GB 2133MHz RDIMM	AnyRAID720i +1GB RAM	8x2.5" HS	4x300GB 2.5" SAS 10K HS	No	No	8/0	DVD±RW	No	10GbEx2 RJ45	ТРМ	No	TSM Premium	No	3-year	1100Wx2 Platinum
70DU0000US	2xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	-	12x4GB 2133MHz RDIMM+12x8GB 2133MHz RDIMM	AnyRAID720ix +1GB RAM	16x2.5" HS	4x1.2TB 2.5" SAS 10K HS +4x300GB 2.5" SAS 10K HS +4x600GB 2.5" SAS 10K HS +4x900GB 2.5" SAS 10K HS	No	3.2TB	6/0	DVD	None	10GbEx2 SFP+ +10GbEx2 SFP+	TPM	Switch	TSM Premium	2012 STD	1-year	750Wx2 Platinum

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

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ThinkServer RD650 - Relationship

### ThinkServer RD650 Options

### Partial list of accessories supported on ThinkServer RD650

Processors  IXG0F28807   ThinkServer RD650 Intel Xeon E5-2699 v3 (18C, 145W, 2.3GHz) Processor Option Kit  IXG0F28808   ThinkServer RD650 Intel Xeon E5-2698 v3 (16C, 135W, 2.3GHz) Processor Option Kit  IXG0F28809   ThinkServer RD650 Intel Xeon E5-2698 v3 (16C, 135W, 2.3GHz) Processor Option Kit  IXG0F28810   ThinkServer RD650 Intel Xeon E5-2695 v3 (14C, 120W, 2.3GHz) Processor Option Kit  IXG0F28811   ThinkServer RD650 Intel Xeon E5-2695 v3 (14C, 120W, 2.3GHz) Processor Option Kit  IXG0F28812   ThinkServer RD650 Intel Xeon E5-2690 v3 (12C, 135W, 2.6GHz) Processor Option Kit  IXG0F28813   ThinkServer RD650 Intel Xeon E5-2680 v3 (12C, 120W, 2.3GHz) Processor Option Kit  IXG0F28814   ThinkServer RD650 Intel Xeon E5-2680 v3 (12C, 120W, 2.3GHz) Processor Option Kit  IXG0F28815   ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.3GHz) Processor Option Kit  IXG0F28816   ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.3GHz) Processor Option Kit  IXG0F28816   ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.3GHz) Processor Option Kit  IXG0F28817   ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.3GHz) Processor Option Kit  IXG0F28818   ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 2.4GHz) Processor Option Kit  IXG0F28819   ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 2.4GHz) Processor Option Kit  IXG0F28820   ThinkServer RD650 Intel Xeon E5-2600 v3 (6C, 85W, 1.6GHz) Processor Option Kit  IXG0F28821   ThinkServer RD650 Intel Xeon E5-2600 v3 (6C, 85W, 1.6GHz) Processor Option Kit  IXG0F28822   ThinkServer RD650 Intel Xeon E5-2600 v3 (6C, 85W, 1.6GHz) Processor Option Kit  IXG0F28831   ThinkServer RD650 Intel Xeon E5-2660 v3 (6C, 85W, 1.6GHz) Processor Option Kit  IXG0F28832   ThinkServer RD650 Intel Xeon E5-2660 v3 (8C, 35W, 3.2GHz) Processor Option Kit  IXG0F28833   ThinkServer RD650 Intel Xeon E5-2660 v3 (8C, 35W, 3.2GHz) Processor Option Kit  IXG0F28836   ThinkServer RD650 Intel Xeon E5-2660 v3 (8C, 35W, 3.2GHz) Processor Option Kit  IXG0F28838   ThinkServer RD650 Intel Xeon E5-2660 v3 (8C,
IXG0F28808   ThinkServer RD650   Intel Xeon E5-2698 v3 (16C, 135W, 2.3GHz) Processor Option Kit IXG0F28809   ThinkServer RD650   Intel Xeon E5-2697 v3 (14C, 145W, 2.6GHz) Processor Option Kit IXG0F28810   ThinkServer RD650   Intel Xeon E5-2695 v3 (14C, 135W, 2.6GHz) Processor Option Kit IXG0F28811   ThinkServer RD650   Intel Xeon E5-2695 v3 (14C, 135W, 2.6GHz) Processor Option Kit IXG0F28811   ThinkServer RD650   Intel Xeon E5-2695 v3 (14C, 135W, 2.6GHz) Processor Option Kit IXG0F28813   ThinkServer RD650   Intel Xeon E5-2680 v3 (14C, 120W, 2.0GHz) Processor Option Kit IXG0F28814   ThinkServer RD650   Intel Xeon E5-2680 v3 (12C, 120W, 2.3GHz) Processor Option Kit IXG0F28815   ThinkServer RD650   Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28816   ThinkServer RD650   Intel Xeon E5-2650 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28816   ThinkServer RD650   Intel Xeon E5-2650 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28818   ThinkServer RD650   Intel Xeon E5-2630 v3 (8C, 95W, 2.4GHz) Processor Option Kit IXG0F28818   ThinkServer RD650   Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819   ThinkServer RD650   Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28810   ThinkServer RD650   Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28820   ThinkServer RD650   Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28822   ThinkServer RD650   Intel Xeon E5-2650   V3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28832   ThinkServer RD650   Intel Xeon E5-2650   V3 (8C, 35W, 1.9GHz) Processor Option Kit IXG0F28833   ThinkServer RD650   Intel Xeon E5-2650   V3 (8C, 135W, 3.6GHz) Processor Option Kit IXG0F28836   ThinkServer RD650   Intel Xeon E5-2650   V3 (8C, 135W, 3.0GHz) Processor Option Kit IXG0F28837   ThinkServer RD650   Intel Xeon E5-2650   V3 (8C, 135W, 3.0GHz) Processor Option Kit IXG0F28838   ThinkServer RD650   Intel Xeon E5-2650   V3 (8C, 135W, 3.0GHz) Processor Option Kit IXG0F28837   ThinkServer RD650   In
IXG0F28809   ThinkServer RD650 Intel Xeon E5-2697 v3 (14C, 145W, 2.6GHz) Processor Option Kit IXG0F28810   ThinkServer RD650 Intel Xeon E5-2695 v3 (14C, 120W, 2.3GHz) Processor Option Kit IXG0F28811   ThinkServer RD650 Intel Xeon E5-2690 v3 (12C, 135W, 2.6GHz) Processor Option Kit IXG0F28812   ThinkServer RD650 Intel Xeon E5-2683 v3 (14C, 120W, 2.0GHz) Processor Option Kit IXG0F28813   ThinkServer RD650 Intel Xeon E5-2680 v3 (12C, 120W, 2.5GHz) Processor Option Kit IXG0F28813   ThinkServer RD650 Intel Xeon E5-2680 v3 (12C, 120W, 2.3GHz) Processor Option Kit IXG0F28814   ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28816   ThinkServer RD650 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit IXG0F28817   ThinkServer RD650 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit IXG0F28818   ThinkServer RD650 Intel Xeon E5-2650 v3 (8C, 90W, 2.6GHz) Processor Option Kit IXG0F28819   ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819   ThinkServer RD650 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit IXG0F28821   ThinkServer RD650 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit IXG0F28821   ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28822   ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28823   ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28834   ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28835   ThinkServer RD650 Intel Xeon E5-2650 v3 (12C, 135W, 3.5GHz) Processor Option Kit IXG0F28836   ThinkServer RD650 Intel Xeon E5-2650 v3 (12C, 135W, 3.5GHz) Processor Option Kit IXG0F28836   ThinkServer RD650 Intel Xeon E5-2650 v3 (12C, 130W, 3.5GHz) Processor Option Kit IXG0F28837   ThinkServer RD650 Intel Xeon E5-2650 v3 (12C, 130W, 3.5GHz) Processor Option Kit IXG0F28838   ThinkServer RD650 Intel Xeon E5-2650 v3 (12C, 130W, 3.6GHz) Processor
IXG0F28810
IXG0F28811
IXG0F28812   ThinkServer RD650   Intel Xeon E5-2683 v3 (14C, 120W, 2.0GHz) Processor Option Kit   IXG0F28813   ThinkServer RD650   Intel Xeon E5-2660 v3 (12C, 120W, 2.3GHz) Processor Option Kit   IXG0F28815   ThinkServer RD650   Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit   IXG0F28815   ThinkServer RD650   Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit   IXG0F28816   ThinkServer RD650   Intel Xeon E5-2650 v3 (10C, 105W, 2.6GHz) Processor Option Kit   IXG0F28817   ThinkServer RD650   Intel Xeon E5-2630 v3 (8C, 90W, 2.6GHz) Processor Option Kit   IXG0F28818   ThinkServer RD650   Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit   IXG0F28819   ThinkServer RD650   Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit   IXG0F28810   ThinkServer RD650   Intel Xeon E5-2600 v3 (6C, 85W, 2.4GHz) Processor Option Kit   IXG0F28820   ThinkServer RD650   Intel Xeon E5-2603 v3 (6C, 85W, 1.9GHz) Processor Option Kit   IXG0F28821   ThinkServer RD650   Intel Xeon E5-2603 v3 (6C, 85W, 1.6GHz) Processor Option Kit   IXG0F28822   ThinkServer RD650   Intel Xeon E5-2650   V3 (12C, 65W, 1.8GHz) Processor Option Kit   IXG0F28831   ThinkServer RD650   Intel Xeon E5-2650   V3 (8C, 135W, 3.2GHz) Processor Option Kit   IXG0F28832   ThinkServer RD650   Intel Xeon E5-2637 v3 (8C, 135W, 3.2GHz) Processor Option Kit   IXG0F28838   ThinkServer RD650   Intel Xeon E5-2637 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0F28838   ThinkServer RD650   Intel Xeon E5-2637 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0F28839   ThinkServer RD650   Intel Xeon E5-2653 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0F28839   ThinkServer RD650   Intel Xeon E5-2653 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0F28839   ThinkServer RD650   Intel Xeon E5-2653 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0F28839   ThinkServer RD650   Intel Xeon E5-2653 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0F28839   ThinkServer RD650   Intel Xeon E5-2653 v3 (4C, 135W, 3.6GHz) Processor Option Kit   IXG0
IXG0F28813 ThinkServer RD650 Intel Xeon E5-2680 v3 (12C, 120W, 2.3GHz) Processor Option Kit IXG0F28814 ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28816 ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28817 ThinkServer RD650 Intel Xeon E5-2650 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28818 ThinkServer RD650 Intel Xeon E5-2640 v3 (8C, 90W, 2.6GHz) Processor Option Kit IXG0F28818 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28821 ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28821 ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28823 ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28832 ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28833 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28835 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28836 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 135W, 3.4GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2630 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2630 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2683 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28839 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28839 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28839 ThinkServer RD650 Intel Xeon
IXG0F28814 ThinkServer RD650 Intel Xeon E5-2660 v3 (12C, 120W, 2.3GHz) Processor Option Kit IXG0F28815 ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit IXG0F28816 ThinkServer RD650 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit IXG0F28817 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28818 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28820 ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28821 ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28821 ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28822 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 55W, 1.8GHz) Processor Option Kit IXG0F28832 ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 55W, 1.8GHz) Processor Option Kit IXG0F28834 ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28835 ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28836 ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28837 ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2638 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2638 v3 (4C, 105W, 2.6GHz) Processor Option Kit IXG0F28588 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28599 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28599 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28591 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28599 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28599 ThinkServer RD650 Intel Xeon E5-2
IXG0F28816   ThinkServer RD650 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit IXG0F28817   ThinkServer RD650 Intel Xeon E5-2640 v3 (8C, 90W, 2.6GHz) Processor Option Kit IXG0F28818   ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819   ThinkServer RD650 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit IXG0F28820   ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 2.4GHz) Processor Option Kit IXG0F28821   ThinkServer RD650 Intel Xeon E5-2603 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28822   ThinkServer RD650 Intel Xeon E5-2603 v3 (6C, 85W, 1.6GHz) Processor Option Kit IXG0F28823   ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28823   ThinkServer RD650 Intel Xeon E5-2650L v3 (8C, 55W, 1.8GHz) Processor Option Kit IXG0F28834   ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28835   ThinkServer RD650 Intel Xeon E5-2643 v3 (6C, 135W, 3.4GHz) Processor Option Kit IXG0F28836   ThinkServer RD650 Intel Xeon E5-2643 v3 (6C, 135W, 3.4GHz) Processor Option Kit IXG0F28837   ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28838   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 3.0GHz) Processor Option Kit IXG0F28838   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28839   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28839   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28591   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28591   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28591   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28591   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28591   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option
IXG0F28817   ThinkServer RD650 Intel Xeon E5-2640 v3 (8C, 90W, 2.6GHz) Processor Option Kit IXG0F28818   ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819   ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28820   ThinkServer RD650 Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28821   ThinkServer RD650 Intel Xeon E5-2600 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28822   ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28823   ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28823   ThinkServer RD650 Intel Xeon E5-26630L v3 (8C, 55W, 1.8GHz) Processor Option Kit IXG0F28834   ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28835   ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28836   ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28836   ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28837   ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838   ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28838   ThinkServer 4GB DDR4-2133MHz (1Rx4) RDIMM   ThinkServer 8GB DDR4-2133MHz
IXG0F28818   ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit IXG0F28819   ThinkServer RD650 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit IXG0F28820   ThinkServer RD650 Intel Xeon E5-2609 v3 (6C, 85W, 1.6GHz) Processor Option Kit IXG0F28821   ThinkServer RD650 Intel Xeon E5-2630 v3 (6C, 85W, 1.6GHz) Processor Option Kit IXG0F28822   ThinkServer RD650 Intel Xeon E5-2630L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28823   ThinkServer RD650 Intel Xeon E5-2630L v3 (8C, 55W, 1.8GHz) Processor Option Kit IXG0F28834   ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28834   ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.4GHz) Processor Option Kit IXG0F28835   ThinkServer RD650 Intel Xeon E5-2643 v3 (6C, 135W, 3.4GHz) Processor Option Kit IXG0F28836   ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28837   ThinkServer RD650 Intel Xeon E5-2632 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28837   ThinkServer RD650 Intel Xeon E5-2632 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838   ThinkServer RD650 Intel Xeon E5-2632 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838   ThinkServer RD650 Intel Xeon E5-2632 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28589   ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM   ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM   ThinkServer 4GB DDR4-2133MHz (1Rx4) RDIMM   ThinkServer 4GB DDR4-2133MHz (1Rx4) RDIMM   ThinkServer 4GB DDR4-2133MHz (4Rx4) LRDIMM   ThinkServer 6GB DDR4-2133MHz (4Rx4) LRDIMM   ThinkServer 6GB DDR4-2133MHz (4Rx4) LRDIMM   ThinkServer 6GB DDR4-2133MHz (4Rx4) LRDIMM   ThinkServer GGB 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive IXB0F28713   ThinkServer GGB 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive IXB0G45715   ThinkServer GGB 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45716   ThinkServer GGB 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45719   ThinkServer GGB 5 3.5" 1TB 7.2K
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IXG0F28820 ThinkServer RD650 Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit IXG0F28821 ThinkServer RD650 Intel Xeon E5-2650 v3 (6C, 85W, 1.6GHz) Processor Option Kit IXG0F28822 ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit IXG0F28823 ThinkServer RD650 Intel Xeon E5-2630L v3 (8C, 55W, 1.8GHz) Processor Option Kit IXG0F28834 ThinkServer RD650 Intel Xeon E5-2630L v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28834 ThinkServer RD650 Intel Xeon E5-2637 v3 (8C, 135W, 3.2GHz) Processor Option Kit IXG0F28836 ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.2GHz) Processor Option Kit IXG0F28836 ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit IXG0F28837 ThinkServer RD650 Intel Xeon E5-2632 v3 (4C, 105W, 3.0GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2638 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28838 ThinkServer RD650 Intel Xeon E5-2638 v3 (12C, 120W, 2.6GHz) Processor Option Kit IXG0F28589 ThinkServer 4GB DDR4-2133MHz (1Rx4) RDIMM 4X70F28590 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM 4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 ThinkServer 32GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive IXB0F28712 ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive IXB0F28711 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive IXB0F28715 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive IXB0G45715 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45716 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45718 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45718 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45718 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45718 ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gb
IXG0F28821   ThinkServer RD650 Intel Xeon E5-2603 v3 (6C, 85W, 1.6GHz) Processor Option Kit
IXG0F28822
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IXG0F28838 ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit  Memory  4X70F28588 ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM  4X70F28590 ThinkServer 16GB DDR4-2133MHz (1Rx4) RDIMM  4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM  4X70F28591 ThinkServer 32GB DDR4-2133MHz (2Rx4) LRDIMM  4X70F28591 ThinkServer 32GB DDR4-2133MHz (3Rx4) LRDIMM  Drives - 3.5"  5." Hot Swap SATA Hard Drives  4XB0F28712 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0F28713 ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0F28714 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0F28715 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0G45716 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45717 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45718 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45719 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45719 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45717 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45718 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45717 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45718 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45719 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45742 ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
Memory
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4X70F28591 ThinkServer 32GB DDR4-2133MHz (4Rx4) LRDIMM  Drives - 3.5"  .5" Hot Swap SATA Hard Drives  4XB0F28712 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0F28713 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0F28714 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  4XB0G45715 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  5" Hot Swap 7.2K SAS Hard Drives  4XB0G45716 ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45717 ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45718 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45719 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  4XB0G45710 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
Drives - 3.5"  STATA Hard Drives  SATA Hard Drives  SATA Hard Drives  ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  SATA HinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  SATA SOLID STATA SOLID State Drives  SATA SOLID State Drives  SATA SOLID State Drives  SATA 6Gbps Hot Swap SATA 6Gbps Hot Swap Hard Drive  SATA 6Gbps Hot Swap SATA Solid State Drives
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IXB0G45717 ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45718 ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive IXB0G45719 ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive  .5" Hot Swap SATA Solid State Drives IXB0G45742 ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXB0G45718   ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive   IXB0G45719   ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive   IXB0G45740   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive   IXB0G45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap SATA 6Gbps
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IXBOG45742   ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXB0G45744 ThinkServer Gen 5 3.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXB0G45745 ThinkServer Gen 5 3.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive IXB0G45746 ThinkServer Gen 5 3.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXBOG45747 ThinkServer Gen 5 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
.5" Hot Swap SAS Solid State Drives
XB0G45733 ThinkServer Gen 5 3.5" 200GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
IXB0G45734 ThinkServer Gen 5 3.5" 400GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
IXB0G45735 ThinkServer Gen 5 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
Drives - 2.5"
.5" Hot Swap SATA Hard Drives
IXB0G45720 ThinkServer Gen 5 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
IXB0G45721 ThinkServer Gen 5 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
.5" Hot Swap 10K SAS Hard Drives IXB0G45722 ThinkServer Gen 5 2.5" 300GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
IXBOG45722 ThinkServer Gen 5 2.5" 600GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
IXB0G45724 ThinkServer Gen 5 2.5" 900GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
IXB0G45725 ThinkServer Gen 5 2.5" 1.2TB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
.5" Hot Swap 15K SAS Hard Drives
IXB0G45726 ThinkServer Gen 5 2.5" 146GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
XB0G45727 ThinkServer Gen 5 2.5" 300GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
IXBOG45728 ThinkServer Gen 5 2.5" 450GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
IXB0G45729 ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
.5" Hot Swap SATA Solid State Drives
IXB0G45736 ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXB0G45737 ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXB0G45737 ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive IXB0G45738 ThinkServer Gen 5 2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
IXB0G45737 ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

	POIs Called Chats Drivers
AVDOFORCE	PCIe Solid State Drives  Think Covers 1 CTB in Moment (SY200 Payformance PCIe 0 0 Calid State Drive by Euginnia
	ThinkServer 1.6TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by FusionIO ThinkServer 3.2TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by FusionIO
4ADUF20002	
4VD0E00000	AnyRAID
	ThinkServer RAID 110i RAID 5 Upgrade
	ThinkServer RAID 510i AnyRAID Adapter
4XB0F28692	ThinkServer RAID 510i RAID 5 Upgrade
4XB0F28693	ThinkServer RAID 720i AnyRAID Adapter
	ThinkServer RAID 720ix AnyRAID Adapter with Expander
	ThinkServer RAID 720i 1GB Modular DRAM Upgrade
	ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade
	ThinkServer RAID 720i 2GB Modular Flash and Supercapacitor Upgrade
4XB0F28698	ThinkServer RAID 720i 4GB Modular Flash and Supercapacitor Upgrade
	Connectivity & Host Bus Adapters
	Adapters - 1Gbps
	ThinkServer I350-T2 PCIe 1Gb 2 Port Base-T Ethernet Adapter by Intel
	ThinkServer I350-T4 PCIe 1Gb 4 Port Base-T Ethernet Adapter by Intel
	ed Network Adapters - 10Gpbs
	ThinkServer X540-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel
4XC0F28733	ThinkServer X520-SR2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel
4XC0F28734	ThinkServer X520-DA2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel
4XC0F28735	ThinkServer 10Gb SR Optical Module by Intel
4XC0F28736	ThinkServer OCe14102-UX-L PCIe 10Gb 2 Port SFP+ Converged Network Adapter by Emulex
4XC0F28737	ThinkServer 10Gb SR Optical Module by Emulex
PCIe Converg	ed Network Adapters - 40Gpbs
	ThinkServer OCe14401-UX-L PCIe 40Gb 1 Port QSFP+ Converged Network Adapter by Emulex
4XC0F28739	ThinkServer 40Gb SR Optical Module by Emulex
PCle Fibre Ch	annel Adapters
4XB0F28704	ThinkServer LPe16002B-M8-L PCIe 8Gb 2 Port Fibre Channel Adapter by Emulex
	ThinkServer LPe16002B-M6-L PCIe 16Gb 2 Port Fibre Channel Adapter by Emulex
4XC0F28745	ThinkServer QLE2672 PCIe 16Gb 2 Port Fibre Channel Adapter by Qlogic
	ers & Upgrades
	ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter by LSI
	ThinkServer CacheVault Data Protection Upgrade
	ThinkServer RAID FastPath Key
	ThinkServer RAID CacheCade Pro 2.0 Key
IXEOI EOI OE	Backup Options
4XE0G45866	ThinkServer LTO-6 Linear Tape Drive Kit by Tandberg
	ThinkServer 2.5TB SAS 6Gbps LTO-6 Tape
4XD01 20003	Redundant Power Supply
4X20F28575	ThinkServer Gen 5 750W Platinum Hot Swap Power Supply
	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4X20F28577	ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply  ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply
4X20F28579	ThinkServer Gen 5 1600W Platinum Hot Swap Power Supply  ThinkServer Gen 5 1600W Platinum Hot Swap Power Supply
TAZUI 200/0	System Options
4XE0G45970	ThinkServer Gen 5 2U 4-Post Slide Rail Kit
	ThinkServer Gen 5 2U Cable Management Arm
	ThinkServer 2U x8/x8/x8 PCle Riser Kit
4XF0G45883	ThinkServer Gen 5 2U 2.5" 8-Drive Backplane Kit
	ThinkServer Gen 5 2U 2.5" 16-Drive Backplane Kit
	ThinkServer Gen 5 4-Post Static Rail Kit
	ThinkServer Gen 5 2.5" 2-Drive Rear Backplane Kit
	ThinkServer Gen 5 DisplayPort to VGA Dongle
	ThinkServer Gen 5 Cable Management Bar
	ThinkServer C13-C14 WW 250V 10A 1.8m Jumper Cord
4XA0E97775	ThinkPad Ultraslim USB DVD Burner
	Microsoft Windows Server ROK
4XI0E51561	Windows Server 2012 R2 Standard ROK (2 CPU/2VMs)
4XI0E51562	Windows Server 2012 R2 Datacenter ROK (2 CPU)
4XI0E51563	Windows Server 2012 R2 Essentials ROK (1-2 CPÚ)

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ThinkServer RD650 Options

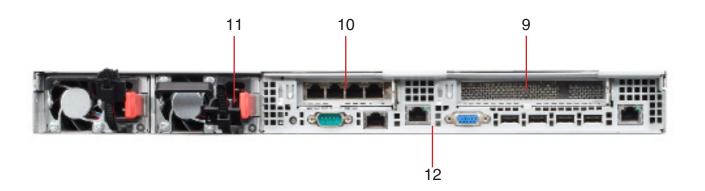
### ThinkServer RD540 Overview - Front and Rear



ThinkServer RD540 with 4x3.5" Disk Drive Bays



ThinkServer RD540 with 8x2.5" Disk Drive Bays



### **Front View**

- 2. 3. 4. 5. 6.

- Hot-swap disk drive bays
  Power Button with LED
  ID button with LED
  2 Network interface status LEDs
  2 USB 2.0
  Intelligent Diagnostics Module (optional)
  Optical (optional, for 3.5" disk drive bay model)
  VGA (for 2.5" disk drive bay model)

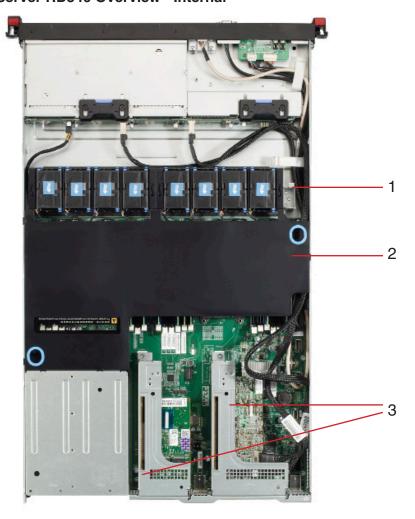
### **Rear View**

- 9. 10.
- PCI Express slots 1\* PCI Express slots 2\* Hot-swap power supplies 11.
- Rear ports: 4 USB 2.0 12.

  - 1 serial 2 ethernet 1 RJ-45 (dedicate/share mgmt) 1 VGA

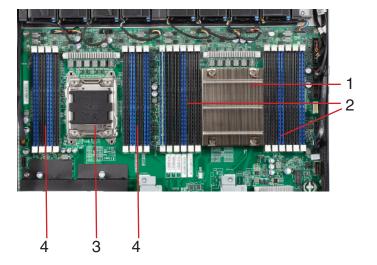
<sup>\*</sup>Adapters are optional

### ThinkServer RD540 Overview - Internal



### **Internal View**

- Non-hot swap cooling fans
   Processors and memory DIMM sockets (under cooling shroud, see below)
   PCI Express slots (\*Adapters are optional)



# Processors and Memory DIMM Sockets (under cooling shroud)

- CPU 1
   12 Memory DIMM sockets for CPU 1
   CPU 2 (optional)
   8 Memory DIMM sockets for CPU 2 (for dual processors model)

## ThinkServer RD540 Platform Specifications

Components	Specifications					
Chipset	Intel C602J Chipset					
Mechanical	• 17kg (37.5 lb) when fu	n D x 43.6mm H (with rack handlully configured	,			
Front ports	Two USB 2.0, one anal	og VGA DB-15 connector (for 8x	2.5" disk bays models)			
Rear ports	Four USB 2.0, one serione RJ-45 (dedicate/sh	al (9-pin), two ethernet (RJ-45), are mgmt), one analog VGA DB	-15 connector			
Expansion Slots	Slot 1: half-length, full-h	via two riser cards, riser card 1 f	0 00000 0			
Graphics	Slot 2: Low Profile, Onboard Aspeed AST2	PCI Express 3.0 x8 300 graphics/management proc r; Maximum resolution: 1920x12	essor, one VGA DB-15 on front (for	8x2.5" disk bays models),		
Hot-swap parts	Disk drives, power supp		00@60H2			
1 lot-swap parts	Environmental	Energy Star Server 2.0 qual	lified			
	certifications	RoHS-compliant	illica			
	EMC	FCC Class A, CSA CE				
	240VA	Supports				
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C	)			
	Temperature - non operating (no package)	-10 °C to 60 °C				
	Temperature - non operating (with package)	-40 °C to 70 °C				
	Altitude - operating	Supported Altitude (unpressuri	zed): 0-10000ft (0-3048m)			
	Humidity - operating	8%~80%, non-condensing				
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing				
	Humidity - non operating (with package)	8%~90%, non-condensing				
		Category	Normal Configuration	High Performance Configuration		
		CPU	1	2		
		HDD	2x 900GB 2.5" SAS 6Gb/s	8x 900GB 2.5" SAS 6Gb/s		
		Memory	1x 8GB 1600MHz LVRDIMM	20x 8GB 1600MHz LVRDIMM		
	Acoustic noise (idle/working mode)	PCIe adapters	I350	1350		
	(idie/working mode)	PSU	1x 800W	2x 800W		
		RAID	RAID 700 adapter	RAID 700 adapter		
		Sound Pressure (operating)	38.6 dB(A)	38.7 dB(A)		
		Sound Pressure (idle)	39.0 dB(A)	40.0 dB(A)		

## ThinkServer RD540 Optional Configurations - Processor and Memory

Rack kit	Included in models									
Processor	Two LGA2011 socke	ets, su	pports up	to two pro	cessors fro	m Intel 3	Ceon E5-2	600 or Xec	n E5-2600 v	2 families,
	up to 8 cores (E5-26 two QPI links up to 8			ores (E5-2	600 v2 seri	es),				
	up to 20MB (E5-260			(E5-2600	v2 series) o	ache.				
	integrated 4-channe	IDDR	3 memor	y controller	up to 1600	MHz (E	5-2600 sei	ries)/1866 <b>N</b>	⁄IHz (Е5-2600	v2 series)
	The following proces	eeor or	ntions are	available:						
	The following proces	5501 U	Juons are	avallable.	D	. 0 : (				1
	Dragonar Number	11 - 6	11 - 6	011-	Processors	Specifi	cations*		Mamari	Part
	Processor Number		# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Number
	Intel Xeon E5-2600			Орсси	requeries		Орсси		Орсси	1
	Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20MB	8 GT/s	130 W	DDR3-1600	0489430
	Xeon E5-2670	8	16	2.6 GHz				115 W	DDR3-1600	
	Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15MB		130 W	DDR3-1600	
	Xeon E5-2665	8	16	2.4 GHz		20MB		115 W	DDR3-1600	
	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB		95 W	DDR3-1600	1
	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB		70 W	DDR3-1600	
	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	
	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB		130 W	DDR3-1600	
	Xeon E5-2640	6	12	2.5 GHz	3 GHz		7.2 GT/s	95 W	DDR3-1333	
	Xeon E5-2630L	6	12	2 GHz	2.5 GHz		7.2 GT/s	60 W	DDR3-1333	
	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz		7.2 GT/s	95 W	DDR3-1333	0A89437
	Xeon E5-2620	6	12	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1333	0A89438
	Xeon E5-2609	4	4	2.4 GHz			6.4 GT/s	80 W	DDR3-1066	0A89441
	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442
	Intel Xeon E5-2600		eries	1	ı			T	T	1
	Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB		130 W	DDR3-1866	
	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB		115 W	DDR3-1866	
	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB		130 W	DDR3-1866	
	Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB		115 W	DDR3-1866	
	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB		115 W	DDR3-1866	
	Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB		130 W	DDR3-1866	
	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB		95 W	DDR3-1866	
	Xeon E5-2650 v2	8	16	2.6 GHz		20MB		95 W	DDR3-1866	
	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz		7.2 GT/s	70 W	DDR3-1600	
	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1600	
	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz		7.2 GT/s	80 W	DDR3-1600	
	Xeon E5-2630L v2 Xeon E5-2620 v2	<u>6</u> 6	12 12	2.4 GHz 2.1 GHz	2.8 GHz 2.6 GHz		7.2 GT/s 7.2 GT/s	60 W 80 W	DDR3-1600 DDR3-1600	
	Xeon E5-2620 V2 Xeon E5-2609 V2	4	4	2.1 GHZ 2.5 GHz	2.0 GHZ		6.4 GT/s	80 W	DDR3-1600 DDR3-1333	
	Xeon E5-2603 v2	4	4	1.8 GHz			6.4 GT/s	80 W	DDR3-1333	
				1.0 UI IZ	I.	LICIVID	U.T U1/5	1 00 00	וסססו -טווסם	1001000
	Notes: All processors specifications in the limit in the									nerein is pro
Memory type	RDIMM, DDR3, 4-cl	nannel	per proc	essor, 240-	-pin					
Memory DIMM sockets	twenty DIMM socket	s (12 s	sockets fo	or CPU 1, 8	3 sockets fo	r CPU 2	)			
Memory capacity	Up to 320GB (16GE	x20)								
Memory protection	ECC, memory mirro	ring, n	nemory s	paring						
		· ·	Mer	nory optior	ns			Part Numb		
	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195		
	ThinkServer 8GB D							0C195		
Memory options	ThinkServer 16GB	אטט	L- 10001VII	72 (ZMX4)	עטוואוואו			0C195	000	
	Notes:  Actual memory oper  By default, the voltag  When using Intel Xe  If LV RIMM runs at 1	ge of LV on E5-2	' RDIMM is 2600 series	1.5V and case processors	an be change , LV RIMM is	ed to1.35 needed	V in BIOS so to run at 1.5	etting V to support	all 20 memory	

## ThinkServer RD540 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the follow 8 x 3.5" SAS/SATA disk 8 x 2.5" SAS/SATA disk 16 x 2.5" SAS/SATA disk	drive bays drive bays					
		Disk dri	ive options			Part Number	
	Hot-swap Disk drive for 3	.5" bay				-	
	3.5" SATA Hard Drive	,					
	ThinkServer 3.5" 500GB	7.2K Enterp	rise SATA 60	Sbps Hot S	wap Hard Drive	0A89473	
	ThinkServer 3.5" 1TB 7.2					0A89474	
	ThinkServer 3.5" 2TB 7.2	<u> </u>				0A89475	
	ThinkServer 3.5" 3TB 7.2					0A89477	
	ThinkServer 3.5" 4TB 7.2				•	0C19520	
	3.5" SAS Hard Drive	ir Emorphic	, 0, 11, 1 0 GBP		p Hara Billo	100.0020	
	ThinkServer 3.5" 1TB 7.2	K SAS 6Ghr	ns Hot Swan	Hard Drive		0C19530	
	ThinkServer 3.5" 2TB 7.2					0C19531	
	ThinkServer 3.5" 3TB 7.2					0C19531	
						67Y2616	
	ThinkServer 3.5" 300GB						
	ThinkServer 3.5" 600GB		inhe uni edur	ap Haru Di	IVE	67Y2618	
Disk drive options	2.5" SSD for 3.5" disk ba	•	Jalia C+-+- D	rive to 0.51	1/:+	0010571	
	ThinkServer 2.5" 100GB					0C19571	
	ThinkServer 2.5" 200GB					0C19572	
	ThinkServer 2.5" 400GB		Solid State D	rive to 3.5	Kit	0C19573	
	Hot-swap Disk drive for 2	.5" bay					
	2.5" SATA Hard Drive						
	ThinkServer 2.5" 500GB				•	0C19495	
	ThinkServer 2.5" 1TB 7.2	K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0C19496	
	2.5" SAS Hard Drive						
	ThinkServer 2.5" 300GB	10K SAS 6G	Sbps Hot Swa	ap Hard Di	rive	67Y2619	
	ThinkServer 2.5" 600GB	10K SAS 6G	67Y2621				
	ThinkServer 2.5" 900GB	10K SAS 6G	Sbps Hot Swa	ap Hard Di	rive	0A89409	
	ThinkServer 2.5" 300GB	15K SAS 6G	Sbps Hot Swa	ap Hard Di	rive	0C19494	
	2.5" SSD						
	ThinkServer 2.5" 100GB	MLC SATA S	Solid State D	rive		0A89420	
	ThinkServer 2.5" 200GB	MLC SATA S	Solid State D	rive		0A89418	
	ThinkServer 2.5" 400GB	MLC SATA S	Solid State D	rive		0A89419	
	RAID adapter F	RAID support	Device	Cache	Host bus	Data transfer rates	Optional upgrades
		IAID Support	Support	Cacric	type	(per port)	
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support
RAID support	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	optional CacheVault flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath
	RAID o	ontroller and	RAID upgra	de options		Part Number	
	ThinkServer RAID 500 A	dapter II				0A89464	
	ThinkServer RAID 500 U		or Advanced	I RAID		0A89407	
	ThinkServer RAID 700 A	, ,				0A89463	
RAID options	ThinkServer RAID 700 A					67Y2647	
-	ThinkServer RAID 700 B					0C19489	
			tor Modula (	Cooke\/a!	<b>+</b> \		
	ThinkServer RAID 710 S			Jacrievaur	ı)	0C19490	
	ThinkServer RAID 710 F			- u		0C19491	
	ThinkServer RAID 710 C	acheCade P	10 2.0 SOftwa	are Key		0C19492	

### ThinkServer RD540 Optional Configurations - Network, System Management, Power Supply

	or opinional configurations in the state of	<b>3</b>
	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
Network options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	НВА	
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
Convity ontions	Trusted Platform Module options	Part Number
Security options	ThinkServer Trusted Platform Module	0A89428
Systems management	System Management options	Part Number
options for iKVM	ThinkServer Management Module Premium	67Y2624
Dower ownsky entions	Power supply options	Part Number
Power supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

### ThinkServer RD540 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer RD540 with 3-year onsite base warranty models

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Tof more information see. http://www.ienovo.com/services_warr	anty/us/en/leno
Upgrade Service Description	Part Number
Warranty	
3YR Onsite 24x7x4 Hour Response	5WS0F15458
3YR Onsite 24x7x8 Hour Response	5WS0F15392
3YR Onsite 9x5x4 Hour Response	5WS0F15355
4YR Onsite 24x7x4 Hour Response	5WS0F15443
4YR Onsite 24x7x8 Hour Response	5WS0F15395
4YR Onsite 9x5x4 Hour Response	5WS0F15394
4YR Onsite NBD	5WS0F15415
5YR Onsite 24x7x4 Hour Response	5WS0F15377
5YR Onsite 24x7x8 Hour Response	5WS0F15440
5YR Onsite 9x5x4 Hour Response	5WS0F15430
5YR Onsite NBD	5WS0F15419
Keep Your Drive (KYD) Service	
3YR Keep Your Drive	5PS0F15436
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456
4YR Onsite NBD + KYD	5PS0F15459
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366
5YR Onsite NBD + KYD	5PS0F15391
Priority Technical Support	ED00E4E447
3YR KYD + Priority Support	5PS0F15417
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468
3YR Priority Support	5WS0E76471
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410
4YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15433
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351
4YR Onsite NBD + KYD + Priority Support 4YR Onsite NBD + Priority Support	5PS0F15373 5WS0F15401
4YR Onsite NBD + Priority Support  4YR Priority Support	
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0E77170
5YR Onsite 24x7x4 Hour Response + RYD + Priority Support	5PS0F15350 5WS0F15412
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471
	5WS0F15447
5YR Onsite 24x7x8 Hour Response + Priority Support 5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382
5YR Onsite NBD + KYD + Priority Support	5PS0F15388
5YR Onsite NBD + Priority Support	5WS0F15463
5YR Priority Support	5WS0E77173
Post Warranty	30000L77173
1YR Onsite 24x7x4 Hour Response	5WS0F15435
1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370
1YR Onsite 24x7x4 Hour Hesponse	5WS0F15427
1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361
1YR Onsite 9x5x4 Hour Response	5WS0F15416
1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348
1YR Onsite NBD	5WS0F15407
1YR Onsite NBD + Priority Support	5WS0F15465
TopSeller Priority (TopSeller models only)	104001 10400
3YR Onsite 24x7x4 Hour Response	5WS0D73789
3YR Onsite 9x5x4 Hour Response	5WS0D73787
4YR Onsite 24x7x4 Hour Response	5WS0D73792
4YR Onsite 9x5x4 Hour Response	5WS0D73791
4YR Onsite NBD	5WS0F15470
3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423
3YR Priority Support	5WS0E76457
4YR Priority Support	5WS0E76482
ouppoin	, J JOE , OTOL

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window

- 24 hours a day, 7 days a week, including nights and weekends
  Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
  Best coverage for business critical work loads

#### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

#### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

24 hours a day, 7 days a week, including nights and weekends Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

#### **Priority Technical Support**

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

#### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html

Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

### ThinkServer RD540 (70AT) - TopSeller

Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		Windows Server 2012	Base on-site warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70AT0004U	1xE5-2620 v2 X 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID710	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0008U	1xE5-2603 v2 X 4C/1.8GHz/ 10MB/1333MHz	4GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0009U	1xE5-2609 v2 X 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000BU	1xE5-2620 v2 X 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000CU	1xE5-2650L v2 1X 10C/1.7GHz/ 25MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000AU	1xE5-2609 v2 X 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0006U	2xE5-2630 v2 X 6C/2.6GHz/ 15MB/1600MHz	16Gx4	4x3.5"	RAID700 +Battery	3x500GB 3.5" SATA(RAID5)	DVD	No	iKVM	350T4	Cable	800Wx2	No	1
70AT0005U	2xE5-2650 v2 S 8C/2.6GHz/ 20MB/1866MHz	4GBx20	4x3.5"	RAID710 +CacheVault +CacheCade	2x400GB SSD(cache,RAID1) +2x3TB 3.5" SAS (RAID1)	DVD±RW	No	iKVM	X520SR2	Cable	800Wx2	Standard	1

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channel	per prod	cessor, 2	40-pin	
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	sparing		r sup
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	Irive bays	8	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ockets  Open
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay  optical disk   disk   disk   disk	
		30 are sup	ported o	on 8x2.5'	' disk bays models	Front - 2.5" bay
Optical (optional)					ROM, slim, SATA interface onal external USB optical	
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Éth rnet ports	ernet po by Intel	orts (RJ-4 ⊢i350;		Rear
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet : Ethernet : Ethernet	dapter 13 X520-SF X520-D <i>P</i> Fiber Mo	350-T4 R2 Serve A2 Serve odule for	r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	ndicate fai	ling com	ponent o	0 ,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)
Security features	Power-on passwo Trusted Platform	ord/admin	istrator p	oassword	d, nt)	Rear: 4 USB 2.0 1 serial (9-pin)
Systems management	Onboard Asporting     IPMI 2.0-compoptional Think     Control Panel	eed AST2 pliant bas Server M	2300 gra eboard r anagem	phics/ma managen ent Modi	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA	
(Optional iKVM)	<ul> <li>Lenovo Smar</li> </ul>	tGrid Mar	nager		Expansion Slots	
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8	
Power supply	One or two 800 v	vatts stan	dard, two	o maximi	um, rear access, hot-swap,	Mechanical
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pl	Server 2.0 ant ntal inform	qualified	d	<ul> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>	

													Windows Server	Base on-site
	Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
	model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
-	OAT000UUX	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top					
Memory type	RDIMM, DDR3, 4	4-channel	per pro	cessor, 2	40-pin						
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2					
Memory protection	ECC, memory m	irroring, n	nemory	sparing		r sup					
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk c	drive bays	S						
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades						
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	wemory sockets sockets sockets sockets					
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan					
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay     Optical						
		30 are sup	ported (	on 8x2.5'	' disk bays models	Front - 2.5" bay					
Optical (optional)					ROM, slim, SATA interface onal external USB optical	One will disk disk disk disk disk disk disk disk					
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Eth	nernet po	orts (RJ-4 I i350;							
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter lå dapter lå X520-SF X520-DÆ Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1					
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in				category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)					
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)					
Systems management	Onboard Asporting     IPMI 2.0-compoptional Think     Control Panel	eed AST2 pliant bas Server M	2300 gra eboard i anagem	phics/ma managen ent Modi	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA						
(Optional iKVM)	<ul> <li>Lenovo Smar</li> </ul>	tGrid Mar	nager		Expansion Slots						
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8						
Power supply	One or two 800 v	vatts stan	dard. tw	o maximi	um, rear access, hot-swap, to power supplies	Mechanical a 111 rook					
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pt	Server 2.0 ant	qualifie	d	<ul> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>						

### ThinkServer RD540 (70AU) - TopSeller

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AU000CUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000SUX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000TUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000UUX	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000WUX	25MB/1866MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	GA2011	sockets	for processors	2U Rack top				
Memory type	RDIMM, DDR3, 4	1-channel	per prod	cessor, 2	40-pin	3. ■ 3. ■ 3.				
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Power supply Paiser card 2 Riser card 2 Riser card 1				
Memory protection	ECC, memory mi	irroring, n	nemory s	paring		r sup				
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	S					
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Societs Societs Societs Societs Societs Societs Societs Societs				
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay    Optical   Click   disk   disk					
		30 are sup	ported o	on 8x2.5'	disk bays models	Front - 2.5" bay				
Optical (optional)					ROM, slim, SATA interface onal external USB optical	●○ □ □ □ ፡፡፡፡ disk disk disk disk disk disk				
Onboard network	Three onboard G Two Gigabit Ethe	igabit Eth	ernet po by Intel	rts (RJ-4 i350;	45): dedicate/share management	Rear				
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in			ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)				
Security features Systems management	Power-on passwortrusted Platform  Onboard Aspelling IPMI 2.0-compoptional Think	Module ( eed AST2 pliant bas Server M	TCG 1.2 2300 grap eboard r anagem	-complia phics/ma nanagen ent Modu	Rear: 4 USB 2.0  1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA					
(Optional iKVM)	<ul><li>Control Panel</li><li>Lenovo Smart</li><li>ThinkServer E</li></ul>	tGrid Mar	nager		Expansion Slots  Slot 1: half-length, full-height, PCI Express 3.0 x1					
Cable mgmt (opt)	Optional cable m	0			Slot 2: Low Profile, PCI Express 3.0 x8					
Power supply	One or two 800 v 80 PLUS® Gold o	vatts stan ıualified. ı	dard, two edundar	o maximi nt with tw	Mechanical  • 1U rack					
Environmental certifications	Energy Star S     RoHS-complia     More environmen     ThinkServer RD540 Pl	Server 2.0 ant ntal inform	qualified nation an	t	10 rack     19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured					

### ThinkServer RD540 (70AU) - TopSeller - II

Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		Windows Server 2012	Base on-site warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage		Diagnostics		ethernet	mgmt	PSU	Preloaded	
70AU000XUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710 +CacheVault	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000YUX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710 +FastPath	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000FUX	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	4GBx2	8x2.5"	RAID700	2x500GB 2.5" SATA(RAID1)	No	No	IPMI	350T2	No	800Wx2	No	1
70AU000DUS	2xE5-2660 v2 10C/2.2GHz/ 25MB/1866MHz	8GBx20	8x2.5"	RAID500 +upgrade	2x300GB 2.5" SAS(RAID1) +6x300GB 2.5" SAS(RAID50)	No	No	iKVM	X520SR2	Cable	800Wx2	Standard	1
70AU000EUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	16Gx4	8x2.5"	RAID710 +FastPath	6x100GB SSD(RAID50)	No	No	IPMI	350T4	No	800Wx2	No	1

<sup>1.</sup> Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	.GA2011	sockets	for processors	2U Rack top					
Memory type	RDIMM, DDR3, 4	1-channe	per pro	cessor, 2	40-pin						
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2					
Memory protection	ECC, memory mi	irroring, n	nemory	sparing		rd 2 rd 2					
Disk drive bays	Supports 4 x 3.5'	or 8 x 2.	5" disk c	drive bays	8						
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory Sockets Society					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	CPU1  CPU1  CPU1  CPU2  CPU2  CPU2  CPU2  CPU2  CPU2  CPU2  CPU3					
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan					
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay  optical disk   disk   disk						
	* All RAID adapt ** RAID 50 and 6				TA drives ' disk bays models	Front - 2.5" bay					
Optical (optional)					ROM, slim, SATA interface onal external USB optical	disk disk disk  disk disk disk disk					
Onboard network	Three onboard G Two Gigabit Ethe	igabit Éth rnet port	nernet po s by Inte	orts (RJ-4 Li350;	45): dedicate/share management	Rear					
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16					
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in				category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)					
Security features	Power-on passwo Trusted Platform 70AU000FUX do • Onboard Aspe	Module (	TCG 1.2 cluded T	-complia <i>PM, addi</i>		Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45)					
Systems management	IPMI 2.0-compoptional Think	oliant bas Server M	eboard i lanagem	managen ent Modu	nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	1 RJ-45 (dedicate/share mgmt) 1 VGA  Expansion Slots					
(Optional iKVM)	<ul><li>Lenovo Smari</li><li>ThinkServer E</li></ul>	tGrid Mar	nager		Slot 1: half-length, full-height, PCI Express 3.0 x16						
Cable mgmt (opt)	Optional cable m					Slot 2: Low Profile, PCI Express 3.0 x8  Mechanical					
Power supply	One or two 800 v 80 PLUS® Gold o	vatts stan Jualified,	dard, tw redunda	o maximi nt with tw	um, rear access, hot-swap, o power supplies	• 1U rack					
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-complia</li> <li>More environmer</li> <li>ThinkServer RD540 Pl</li> </ul>	Server 2.0 ant	qualifie	d		19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured					

### ThinkServer RD540 (70AU) - TopSeller (August 2014)

Product Specifications Reference (PSREF)

ſ													Windows	
													Server	on-site
	Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
	model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
		Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	8x2.5	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channel	per prod	cessor, 2	40-pin	
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	sparing		r sup
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	Irive bays	8	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ockets  Open
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay  optical disk   disk   disk   disk	
		30 are sup	ported o	on 8x2.5'	' disk bays models	Front - 2.5" bay
Optical (optional)					ROM, slim, SATA interface onal external USB optical	
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Éth rnet ports	ernet po by Intel	orts (RJ-4 ⊢i350;		Rear
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet : Ethernet : Ethernet	dapter 13 X520-SF X520-D <i>P</i> Fiber Mo	350-T4 R2 Serve A2 Serve odule for	r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	ndicate fai	ling com	ponent o	0 ,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)
Security features	Power-on passwo Trusted Platform	ord/admin	istrator p	oassword	d, nt)	Rear: 4 USB 2.0 1 serial (9-pin)
Systems management	Onboard Asporting     IPMI 2.0-compoptional Think     Control Panel	eed AST2 pliant bas Server M	2300 gra eboard r anagem	phics/ma managen ent Modi	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA	
(Optional iKVM)	<ul> <li>Lenovo Smar</li> </ul>	tGrid Mar	nager		Expansion Slots	
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8	
Power supply	One or two 800 v	vatts stan	dard, two	o maximi	Mechanical	
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pl	Server 2.0 ant ntal inform	qualified	d	<ul> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>	

### ThinkServer RD540 (70AR)

												Windows	Base
												Server	on-site
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70AR0000UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AR0001UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	.GA2011	sockets	for processors	2U Rack top				
Memory type	RDIMM, DDR3, 4	1-channe	per prod	cessor, 2	40-pin					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2 Riser card 1				
Memory protection	ECC, memory mi	irroring, n	nemory s	paring		rd 2 rd 2				
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	3	Poly Poly				
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory Scokers				
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	CPU1 Kels Kels Kels Kels Kels Kels Kels Kels				
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay				
		30 are sur	oported o	on 8x2.5'	' disk bays models	Front - 2.5" bay				
Optical (optional)					ROM, slim, SATA interface onal external USB optical	e∘ □□□ :::: disk disk disk disk disk disk disk disk				
Onboard network	Three onboard G Two Gigabit Ethe	igabit Éth rnet ports	nernet po s by Intel	rts (RJ-4 i350;	45): dedicate/share management	Rear				
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1-PC				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	selected ndicate fa	models, iling com	ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)				
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)				
Systems management	Onboard Aspetite     IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 graj eboard r anagem	ohics/ma nanagen ent Modi	nagement processor, nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	<ul> <li>Lenovo Smart</li> </ul>	tGrid Mar	nager			Expansion Slots				
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>					Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 v	vatts stan	dard, two	o maximi	um, rear access, hot-swap,	Mechanical				
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pl	Server 2.0 ant	qualified	b	ements, see	1U rack     19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured				
See footnotes for impo	rtant warranty infor	mation				© Lenovo				

### ThinkServer RD540 (70AS)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt		Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AS0008UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AS000GUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	iKVM	No	No	800Wx1	No	3

<sup>2. 8</sup> x 2.5" disk bays models do not support optical bay, external USB optical is needed 1. Model in italics is Global

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	.GA2011	sockets	for processors	2U Rack top				
Memory type	RDIMM, DDR3, 4	1-channe	per prod	cessor, 2	40-pin					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2 Riser card 1				
Memory protection	ECC, memory mi	irroring, n	nemory s	paring		rd 2 rd 2				
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	3	Poly Poly				
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory Scokers				
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	CPU1 Kels Kels Kels Kels Kels Kels Kels Kels				
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay				
		30 are sur	oported o	on 8x2.5'	' disk bays models	Front - 2.5" bay				
Optical (optional)					ROM, slim, SATA interface onal external USB optical	e∘ □□□ :::: disk disk disk disk disk disk disk disk				
Onboard network	Three onboard G Two Gigabit Ethe	igabit Éth rnet ports	nernet po s by Intel	rts (RJ-4 i350;	45): dedicate/share management	Rear				
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1-PC				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	selected ndicate fa	models, iling com	ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)				
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)				
Systems management	Onboard Aspetite     IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 graj eboard r anagem	ohics/ma nanagen ent Modi	nagement processor, nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	<ul> <li>Lenovo Smart</li> </ul>	tGrid Mar	nager			Expansion Slots				
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>					Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 v	vatts stan	dard, two	o maximi	um, rear access, hot-swap,	Mechanical				
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pl	Server 2.0 ant	qualified	b	ements, see	1U rack     19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured				
See footnotes for impo	rtant warranty infor	mation				© Lenovo				

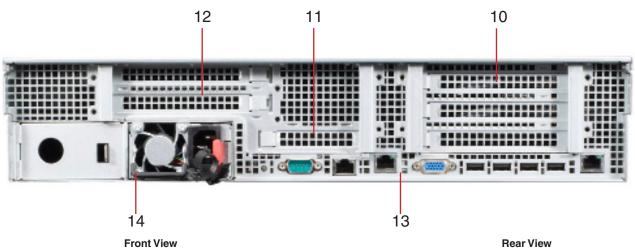
### ThinkServer RD640 Overview - Front and Rear



ThinkServer RD640 with 8x2.5"/16x2.5" Disk Drive Bays



ThinkServer RD640 with 8x3.5" Disk Drive Bays



- Intelligent Diagnostics Premium Module (optional) Power Button with LED ID button with LED

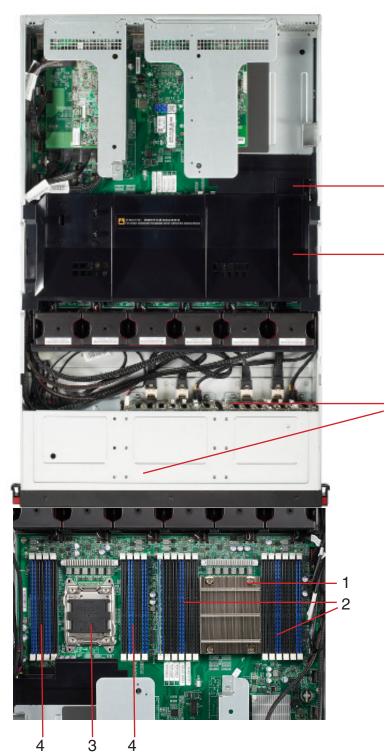
- 2 Network interface status LEDs 2 USB 2.0 1 VGA

- Hot-swap disk drive bays Hot-swap disk drive bays for 16x2.5" hard drive bays model Optical (optional)
- 1. 2. 3. 4. 5. 6. 7. 8. 9.

- 11.
- PCI Express slots 1-3 PCI Express slots 4 PCI Express slots 5-6 (for dual processors model) 12.
- Rear ports: 4 USB 2.0 13.

  - 1 serial 2 ethernet
  - 1 RJ-45 (dedicate/share mgmt)
  - 1 VGA
- 14. Hot-swap power supplies

### ThinkServer RD640 Overview - Internal



### **Internal View**

- Hot-swap cooling fans
   Processors and memory DIMM sockets (under cooling shroud, see below)
   PCI Express slots

# Processors and Memory DIMM Sockets (under cooling shroud)

2

3

- CPU 1
   12 Memory DIMM sockets for CPU 1
   CPU 2 (optional)
   8 Memory DIMM sockets for CPU 2 (for dual processors model)

## ThinkServer RD640 Platform Specifications

Components	Specifications												
Chipset	Intel C602J Chipset												
	2U rack with rail kit												
Mechanical	• 19"W X 28.9"D X 3.4	5"H (with rack handles) m D x 87.6mm H (with rack handl	95)										
	• 26.5 kg (58.42 lb) wh		es)										
Front ports	Two USB 2.0, one ana	log VGA DB-15 connector											
Rear ports	Four USB 2.0, one ser	ial (9-pin), two ethernet (RJ-45),											
riodi porto	one RJ-45 (dedicate/s	hare mgmt), one analog VGA DB	-15 connector										
Expansion Slots	PSU F		0										
	Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6 Slot 1: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: half-length, full-height, PCI Express 3.0 x8 Slot 4: Low Profile, PCI Express 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCI Express 3.0 x8												
Graphics	Onboard Aspeed AST	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;  Maximum resolution: 1920x1200@60Hz											
Hot-swap parts	Disk drives, power sup	pplies, and cooling fans											
	Environmental  • Energy Star Server 1.1 qualified												
	certifications	RoHS-compliant											
	EMC	FCC Class A, CSA CE											
	240VA	- September 1											
	Temperature - operating												
	Temperature - non operating (no package)	ing -10 °C to 60 °C											
	Temperature - non operating (with package)	-40 °C to 70 °C											
	Altitude - operating	Supported Altitude (unpressuri	zed): 0-10000ft (0-3048m)										
	Humidity - operating	8%~80%, non-condensing											
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing											
	Humidity - non operating (with package)	8%~90%, non-condensing											
		Category	Normal Configuration	Best Configuration									
		CPU	1	2									
		HDD	2x 900GB 2.5" SAS 6Gb/s	16x 900GB 2.5" SAS 6Gb/s									
		Memory	1x 8GB 1600MHz LVRDIMM	20x 8GB 1600MHz LVRDIMM									
	Acoustic noise (idle/working mode)	PCIe adapters	I350 X520-DA2 Emulex LPe16002	I350 X520-DA2 Emulex LPe16002									
		PSU	1x 800W	2x 800W									
		RAID	RAID 700 adapter	RAID 700 adapter									
	S	Sound Pressure (operating)	44.1 dB(A)	42.91 dB(A)									
		Sound Pressure (idle)	44.4 dB(A) 43.8 dB(A)										

## ThinkServer RD640 Optional Configurations - Processor and Memory

Rack kit	Included in models												
Processor	Two LGA2011 socke up to 8 cores (E5-26 two QPI links up to 8 up to 20MB (E5-260 integrated 4-channe	800 se 8.0GT/ 90 seri	ries)/12 c ⁄s each, es)/30MB	ores (E5-2 (E5-2600	600 v2 seri v2 series) o	es), cache,							
	The following proces	ssor o	otions are	available:									
	Processor Specifications*  Processor Number # of # of Clock Max Turbo Cache QPI Max TDP Speed Speed Frequency Speed								Part Number				
	Intel Xeon E5-2600		Threads	Speed	Frequency		Speed		Speed				
	Xeon E5-2690	8	16	2.9 GHz	3.8 GHz	20MB	8 GT/s	135 W	DDR3-1600	0480420			
	Xeon E5-2680	8	16	2.7 GHz				130 W	DDR3-1600				
	Xeon E5-2670	8	16	2.6 GHz	3.3 GHz			115 W	DDR3-1600				
	Xeon E5-2667	6	12	2.9 GHz				130 W	DDR3-1600				
	Xeon E5-2665	8	16	2.4 GHz	3.1 GHz			115 W	DDR3-1600				
	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB		95 W	DDR3-1600				
	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB		70 W	DDR3-1600				
	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB		95 W	DDR3-1600				
	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB		130 W	DDR3-1600				
	Xeon E5-2640	6	12	2.5 GHz	3 GHz		7.2 GT/s	95 W	DDR3-1333				
	Xeon E5-2630L	6	12	2 GHz	2.5 GHz		7.2 GT/s	60 W	DDR3-1333				
	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz		7.2 GT/s	95 W	DDR3-1333	0A89437			
	Xeon E5-2620	6	12	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1333				
	Xeon E5-2609	4	4	2.4 GHz			6.4 GT/s	80 W	DDR3-1066				
	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442			
	Intel Xeon E5-2600	) v2 S	eries	T	I		1		ı				
	Xeon E5-2697 v2	12	24	2.7 GHz		30MB		130 W	DDR3-1866				
	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB		115 W	DDR3-1866				
	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB		130 W	DDR3-1866				
	Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB		115 W	DDR3-1866				
	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB		115 W	DDR3-1866				
	Xeon E5-2667 v2 Xeon E5-2660 v2	10	16 20	3.3 GHz 2.2 GHz	4 GHz 3 GHz	25MB 25MB		130 W 95 W	DDR3-1866 DDR3-1866				
	Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz		8 GT/s	95 W	DDR3-1866				
	Xeon E5-2650L v2	10	20	1.7 GHz			7.2 GT/s	70 W	DDR3-1600				
	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1600				
	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz		7.2 GT/s	80 W	DDR3-1600				
	Xeon E5-2630L v2	6	12	2.4 GHz				60 W	DDR3-1600				
	Xeon E5-2620 v2	6	12	2.1 GHz			7.2 GT/s	80 W	DDR3-1600				
	Xeon E5-2609 v2	4	4	2.5 GHz		1	6.4 GT/s	80 W	DDR3-1333				
	Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19560			
	Notes:  All processors specifications is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is".  Intel may update this information in non-scheduled. For latest information, please see <a href="http://ark.intel.com/">http://ark.intel.com/</a>												
Memory type	RDIMM, DDR3, 4-cl	nanne	per proc	essor, 240-	-pin								
lemory DIMM sockets	twenty DIMM socket	ts (12	sockets fo	or CPU 1, 8	3 sockets fo	r CPU 2	2)						
lemory capacity	Up to 320GB (16GE	3x20)											
lemory protection	ECC, memory mirro	ring, n	nemory s	paring									
			Mer	nory optior	ns			Part Numb					
	ThinkServer 4GB D	DR3I	-1600MH	z (1RX8) F	RDIMM			0C195					
	1												
A	ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM												
Memory options	Notes:  • Actual memory oper					y controll	er speed. in	1		quantity of memory	DIMM		
	By default, the voltage     When using Intel Xe     If LV RIMM runs at 1	ge of LV on E5-2	/ RDIMM is 2600 series	1.5V and ca processors	an be change , LV RIMM is	ed to1.35 needed	V in BIOS s to run at 1.5	etting V to support	all 20 memory		J.,VIIV		

## ThinkServer RD640 Optional Configurations - Storage and RAID

<ul> <li>8 x 3.5" SAS/SATA dis</li> <li>8 x 2.5" SAS/SATA dis</li> </ul>	sk drive bays sk drive bays					
	Disk dri	ive options			Part Number	
Hot-swap Disk drive for	3.5" bay				· ·	
3.5" SATA Hard Drive	-					
ThinkServer 3.5" 500GE	3 7.2K Enterpr	rise SATA 60	Sbps Hot S	Swap Hard Drive	0A89473	
ThinkServer 3.5" 1TB 7	.2K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0A89474	
ThinkServer 3.5" 2TB 7	.2K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0A89475	
					0A89477	
					0C19520	
3.5" SAS Hard Drive	·					
ThinkServer 3.5" 1TB 7	.2K SAS 6Gbr	os Hot Swap	Hard Driv	e	0C19530	
		-	•			
		07.12010				
	,	0C19571				
		Jona Glate D	1100 10 0.5	TXIC	0013370	
•						
	0010405					
	2K Enterprise	00 19496				
	2 4 0 1 0 0 0 0 0	07)(0040				
	3 15K SAS 6G	ibps Hot Swa	ap Hard D	rive	0019494	
	100000					
ThinkServer 2.5" 400GE	B MLC SAIA S	Solid State D	rive			
RAID adapter	RAID support	Device Support	Cache	Host bus type	Data transfer rates (per port)	Optional upgrades
ThinkServer RAID 500	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support
ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)
ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	optional CacheVault flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath
RAID	controller and	RAID upgra	de options	;	Part Number	
ThinkServer RAID 500	Adapter II				0A89464	
ThinkServer RAID 500	Jpgrade Kev f	or Advanced	RAID		0A89407	
	, ,	0A89463				
		_				
71111110017017171107710	CacheCade P				00.0401	
	• 8 x 3.5" SAS/SATA dis • 8 x 2.5" SAS/SATA dis • 16 x 2.5" SOOGE  ThinkServer 3.5" 500GE  ThinkServer 3.5" 3TB 7  ThinkServer 3.5" 3TB 7  ThinkServer 3.5" 4TB 7  ThinkServer 3.5" 3TB 7  ThinkServer 3.5" 3TB 7  ThinkServer 3.5" 300GE  ThinkServer 3.5" 600GE  2.5" SSD for 3.5" disk b  ThinkServer 2.5" 100GE  ThinkServer 2.5" 400GE  Hot-swap Disk drive for 2.5" SATA Hard Drive  ThinkServer 2.5" 500GE  ThinkServer 2.5" 300GE  ThinkServer 2.5" 400GE  ThinkServer RAID 700  (LSI SAS 9240-8i)  ThinkServer RAID 700  (LSI SAS 9270CV-8i)  ThinkServer RAID 700  ThinkServer RAID 700	• 8 x 3.5" SAS/SATA disk drive bays • 8 x 2.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays  Disk drive for 3.5" bay 3.5" SATA Hard Drive ThinkServer 3.5" 500GB 7.2K Enterprise ThinkServer 3.5" 1TB 7.2K Enterprise ThinkServer 3.5" 2TB 7.2K Enterprise ThinkServer 3.5" 3TB 7.2K Enterprise ThinkServer 3.5" 3TB 7.2K Enterprise 3.5" SAS Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbp ThinkServer 3.5" 3TB 7.2K SAS 6Gbp ThinkServer 3.5" 3TB 7.2K SAS 6Gbp ThinkServer 3.5" 300GB 15K SAS 6Gb ThinkServer 3.5" 600GB 15K SAS 6Gb ThinkServer 2.5" 100GB MLC SATA S ThinkServer 2.5" 200GB MLC SATA S ThinkServer 2.5" 400GB MLC SATA S ThinkServer 2.5" 500GB 7.2K Enterprise 2.5" SATA Hard Drive ThinkServer 2.5" 1TB 7.2K Enterprise 2.5" SAS Hard Drive ThinkServer 2.5" 300GB 10K SAS 6G ThinkServer 2.5" 400GB MLC SATA S ThinkServer 2.5" 300GB 15K SAS 6G ThinkServer 2.5" 300GB 15K SAS 6G ThinkServer 2.5" 300GB 10K SAS 6G	• 8 x 2.5" SAS/SATA disk drive bays  Disk drive options  Hot-swap Disk drive for 3.5" bay 3.5" SATA Hard Drive  ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6GD, ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6GD, ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6GD, ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6GD, 3.5" SAS Hard Drive  ThinkServer 3.5" 3TB 7.2K SAS 6GDps Hot Swap ThinkServer 3.5" 3TB 7.2K SAS 6GDps Hot Swap ThinkServer 3.5" 3TB 7.2K SAS 6GDps Hot Swap ThinkServer 3.5" 300GB 15K SAS 6GDps Hot Swap ThinkServer 3.5" 600GB 15K SAS 6GDps Hot Swap ThinkServer 2.5" 100GB MLC SATA Solid State D ThinkServer 2.5" 100GB MLC SATA Solid State D ThinkServer 2.5" 200GB MLC SATA Solid State D ThinkServer 2.5" 400GB MLC SATA Solid State D ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6GD 2.5" SATA Hard Drive  ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6GD 2.5" SAS Hard Drive  ThinkServer 2.5" 300GB 10K SAS 6GDps Hot Sw. ThinkServer 2.5" 600GB 10K SAS 6GDps Hot Sw. ThinkServer 2.5" 900GB 10K SAS 6GDps Hot Sw. ThinkServer 2.5" 300GB 15K SAS 6GDps Hot Sw. ThinkServer 2.5" 300GB MLC SATA Solid State D ThinkServer 2.5" 400GB MLC SATA Solid State D ThinkServer 2.5" 400GB MLC SATA Solid State D ThinkServer RAID 500 (LSI® SAS 9240-8i)  ThinkServer RAID 500 Upgrade Key for Advanced ThinkServer RAID 500 Adapter II  ThinkServer RAID 500 Upgrade Key for Advanced ThinkServer RAID 500 Adapter II  ThinkServer RAID 700 Adapter II	B X 3.5" SAS/SATA disk drive bays Bisk 2.5" SAS/SATA disk drive bays Ibisk drive options Hot-swap Disk drive for 3.5" bay 3.5" SATA Hard Drive ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap 3.5" SAS Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 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300GB 10K SAS 6Gbps Hot Swap Hard Drive ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive ThinkServer RAID 700 0, 1, 10, SAS/SATA 512MB ThinkServer RAID 500 Upgrade Key for Advanced RAID ThinkServer RAID 700 Adapter II ThinkServer RAID 700 Adapter II ThinkServer RAID 700 Adapter II ThinkServer RAID 700 Battery ThinkServer RAID 710 Adapter II ThinkServer RAID 710 Adapter II ThinkServer RAID 710 Adapter I	B & X.5.5' SAS/SATA disk drive bays Bisk drive says Bisk drive says Bisk drive says Bisk drive options Hot-swap Disk drive for 3.5" bay Bisk drive for 3.5" at 18 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 4TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive 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2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive ThinkServer RAID 500 Device D	• 8 x 3.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays • 16 x 2.5" SAS/SATA disk drive bays  Disk drive options  Part Number  Hot-swap Disk drive for 3.5" bay 3.5" SATA Hard Drive  ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  OA89473  ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  OA89477  ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  OA89477  ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  OC19520  3.5" SAS Hard Drive  ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive  ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive  OC19530  ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive  OC19531  ThinkServer 3.5" 3D00GB 15K SAS 6Gbps Hot Swap Hard Drive  OC19532  ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive  67Y2616  ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive  2.5" SSD for 3.5" disk bay  ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit  OC19571  ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit  OC19572  ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit  OC19573  Hot-swap Disk drive for 2.5" bay  2.5" SATA Hard Drive  ThinkServer 2.5" 300GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  OA89409  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  OA89409  ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive  OA89418  ThinkSe

## ThinkServer RD640 Optional Configurations - Network, System Management, Power Supply

	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
Network options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	НВА	
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
Coought ontions	Trusted Platform Module options	Part Number
Security options	ThinkServer Trusted Platform Module	0A89428
Systems management	System Management options	Part Number
options for iKVM	ThinkServer Management Module Premium	67Y2624
	Power supply options	Part Number
Power supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

### ThinkServer RD640 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer RD540 with 3-year onsite base warranty models

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

3YR Onsite 24x7x4 Hour Response	For more information see: http://www.ienovo.com/services_warr	
3YR Onsite 24x7x8 Hour Response 3YSOF15392 3YR Onsite 9x5x4 Hour Response 5WSOF15395 4YR Onsite 9x5x4 Hour Response 5WSOF15395 4YR Onsite 24x7x4 Hour Response 5WSOF15395 4YR Onsite 24x7x4 Hour Response 5WSOF15394 4YR Onsite 9x5x4 Hour Response 5WSOF15394 4YR Onsite 9x5x4 Hour Response 5WSOF15394 5YR Onsite 24x7x8 Hour Response 5WSOF15405 5YR Onsite 9x5x4 Hour Response 5WSOF15410 5YR Onsite 9x5x4 Hour Response 3YR Reep Your Drive 3YR Reep Your Drive 3YR Onsite 24x7x4 Hour Response + KYD 5PSOF15349 3YR Onsite 24x7x4 Hour Response + KYD 5PSOF15349 3YR Onsite 24x7x4 Hour Response + KYD 5PSOF15349 4YR Onsite 24x7x4 Hour Response + KYD 5PSOF15349 4YR Onsite 24x7x4 Hour Response + KYD 5PSOF15349 4YR Onsite 9x5x4 Hour Response + KYD 5PSOF15456 4YR Onsite 9x5x4 Hour Response + KYD 5PSOF15456 5YR Onsite 9x5x4 Hour Response + KYD 5YR Onsite 9x5x4 Hour Response + KYD 5PSOF15456 5YR Onsite 24x7x4 Hour Response + KYD 5PSOF15456 5YR Onsite 9x5x4 Hour Response + KYD 5PSOF15459 5YR Onsite 24x7x4 Hour Response + KYD 5PSOF15450 5YR Onsite 9x5x4 Hour Response + KYD 5PSOF15381 5YR Onsite 24x7x4 Hour Response + KYD 5PSOF15381 5YR Onsite 9x5x4 Hour Response + FYD 5PSOF15381 5YR Onsite 9x5x4 Hour Response + Priority Support 3YR Onsite 24x7x4 Hour Response + Priority Support 5PSOF15417 3YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15417 5YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15430 3YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15430 5YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15430 5YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15430 5YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15430 5YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15431 5YR Onsite 9x5x4 Hour Response + Priority Support 5PSOF15433 5YR	Upgrade Service Description Warranty	Part Number
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5YR Onsite 24X7XB Hour Response         5WS0F15440           5YR Onsite 9x5x4 Hour Response         5WS0F15419           XPR Onsite NBD         5WS0F15419           XPR Onsite 24X7X4 Hour Response + KYD         5PS0F15376           3YR Onsite 24X7X8 Hour Response + KYD         5PS0F15349           3YR Onsite 24X7X4 Hour Response + KYD         5PS0F15448           4YR Onsite 24X7X8 Hour Response + KYD         5PS0F15349           4YR Onsite 24X7X8 Hour Response + KYD         5PS0F15359           4YR Onsite 9x5x4 Hour Response + KYD         5PS0F15459           5YR Onsite 9x5x4 Hour Response + KYD         5PS0F15459           5YR Onsite 24X7X8 Hour Response + KYD         5PS0F15402           5YR Onsite 24X7X8 Hour Response + KYD         5PS0F15366           5YR Onsite 9x5x4 Hour Response + KYD         5PS0F15366           5YR Onsite 9x5x4 Hour Response + KYD         5PS0F15361           3YR Onsite 24X7X8 Hour Response + KYD         5PS0F15361           3YR Onsite 24X7X4 Hour Response + KYD + Priority Support         3YR Onsite 24X7X4 Hour Response + KYD + Priority Support           3YR Onsite 24X7X4 Hour Response + KYD + Priority Support         5PS0F15398           3YR Onsite 24X7X4 Hour Response + KYD + Priority Support         5PS0F15402           3YR Onsite 24X7X4 Hour Response + KYD + Priority Support         5PS0F15403		
5YR Onsite NBD         5WS0F15430           Keep Your Drive (KYD) Service         3YR Keep Your Drive         5WS0F15419           3YR Onsite 24X7X4 Hour Response + KYD         5PS0F15376           3YR Onsite 24X7X8 Hour Response + KYD         5PS0F15349           3YR Onsite 9x5x4 Hour Response + KYD         5PS0F15349           4YR Onsite 24X7X8 Hour Response + KYD         5PS0F15389           4YR Onsite 24X7X8 Hour Response + KYD         5PS0F15389           4YR Onsite 24X7X8 Hour Response + KYD         5PS0F15359           4YR Onsite 8X5X4 Hour Response + KYD         5PS0F15456           4YR Onsite NEW HOW FRESPONSE + KYD         5PS0F15459           5YR Onsite 24X7X4 Hour Response + KYD         5PS0F15381           5YR Onsite 24X7X4 Hour Response + KYD         5PS0F15381           5YR Onsite 9X5X4 Hour Response + KYD         5PS0F15381           5YR Onsite 9X5X4 Hour Response + KYD         5PS0F15391           3YR KYD + Priority Support         5PS0F15391           3YR KYD + Priority Support         5PS0F15392           3YR Onsite 24X7X4 Hour Response + FYD + Priority Support         5PS0F15352           3YR Onsite 24X7X4 Hour Response + KYD + Priority Support         5PS0F15353           3YR Onsite 24X7X4 Hour Response + FYO + Priority Support         5PS0F15353           3YR Onsite 24X7X8 Hour Response + Priority Support<		
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3YR Keep Your Drive   SPS0F15376   3YR Onsite 24x7x4 Hour Response + KYD   SPS0F15376   3YR Onsite 24x7x8 Hour Response + KYD   SPS0F15349   3YR Onsite 9x5x4 Hour Response + KYD   SPS0F15349   4YR Onsite 24x7x8 Hour Response + KYD   SPS0F15349   4YR Onsite 24x7x8 Hour Response + KYD   SPS0F15359   4YR Onsite 9x5x4 Hour Response + KYD   SPS0F15359   4YR Onsite 9x5x4 Hour Response + KYD   SPS0F15456   5YR Onsite 24x7x8 Hour Response + KYD   SPS0F15459   5YR Onsite 24x7x4 Hour Response + KYD   SPS0F15360   5YR Onsite 9x5x4 Hour Response + KYD   SPS0F15366   5YR Onsite 9x5x4 Hour Response + KYD   SPS0F15366   5YR Onsite 9x5x4 Hour Response + KYD   SPS0F15366   3YR Onsite 9x5x4 Hour Response + KYD   SPS0F15360   3YR Onsite 24x7x4 Hour Response + Friority Support   3YR Onsite 24x7x4 Hour Response + Priority Support   SPS0F15399   3YR Onsite 24x7x4 Hour Response + Priority Support   SPS0F15399   3YR Onsite 9x5x4 Hour Response + Priority Support   SWS0F15399   3YR Onsite 9x5x4 Hour Response + Friority Support   SWS0F15418   3YR Onsite 9x5x4 Hour Response + Friority Support   SWS0F15468   3YR Priority Support   SWS0F15468   SYR Priority Support   SWS0F15468   3YR Priority Support   SWS0F15468   SYR Priority Support   SWS0F15468   SYR Priority Support   SWS0F15468   3YR Onsite 24x7x8 Hour Response + Friority Support   SWS0F15460   SYS0F15460   S		00000110410
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4YR Onsite NBD + KYD         5PS0F15459           5YR Onsite 24x7x4 Hour Response + KYD         5PS0F15492           5YR Onsite 24x7x8 Hour Response + KYD         5PS0F15381           5YR Onsite 9x5x4 Hour Response + KYD         5PS0F15366           5YR Onsite 9x5x4 Hour Response + KYD         5PS0F15366           5YR Onsite NBD + KYD         5PS0F15366           5YR Onsite Px7         5PS0F15367           3YR KYD + Priority Support         5PS0F15367           3YR Onsite 24x7x4 Hour Response + KYD + Priority Support         5PS0F15392           3YR Onsite 24x7x8 Hour Response + KYD + Priority Support         5PS0F15393           3YR Onsite 9x5x4 Hour Response + KYD + Priority Support         5PS0F15398           3YR Onsite 9x5x4 Hour Response + KYD + Priority Support         5PS0F15398           3YR Onsite 9x5x4 Hour Response + KYD + Priority Support         5PS0F15483           4YR Onsite 24x7x8 Hour Response + KYD + Priority Support         5PS0F15462           4YR Onsite 24x7x4 Hour Response + KYD + Priority Support         5PS0F15462           4YR Onsite 24x7x8 Hour Response + FYD + Priority Support         5PS0F15462           4YR Onsite 9x5x4 Hour Response + FYD + Priority Support         5PS0F15462           4YR Onsite 9x5x4 Hour Response + FYD + Priority Support         5PS0F15472           4YR Onsite 9x5x4 Hour Response + FYD + Priority Support <td< td=""><td>4YR Onsite 24x7x4 Hour Response + KYD</td><td>5PS0F15389</td></td<>	4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389
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### STR Onsite NBD + KYD ### SPS0F15391  ### Priority Technical Support		
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5YR Onsite 9x5x4 Hour Response + Priority Support         5WS0F15382           5YR Onsite NBD + KYD + Priority Support         5PS0F15388           5YR Onsite NBD + Priority Support         5WS0F15463           5YR Priority Support         5WS0E77173           Post Warranty           1YR Onsite 24x7x4 Hour Response         5WS0F15435           1YR Onsite 24x7x4 Hour Response + Priority Support         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15427           1YR Onsite 9x5x4 Hour Response         5WS0F15361           1YR Onsite 9x5x4 Hour Response         5WS0F15416           1YR Onsite 9x5x4 Hour Response         5WS0F15465           1YR Onsite NBD + Priority Support         5WS0F15465           1YR Onsite Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response         5WS0D73789           3YR Onsite 9x5x4 Hour Response         5WS0D73787         4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite NBD         5WS0D73791         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15470           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15414           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3Y		
5YR Onsite NBD + KYD + Priority Support         5PS0F15388           5YR Onsite NBD + Priority Support         5WS0F15463           5YR Priority Support         5WS0E77173           Post Warranty           1YR Onsite 24x7x4 Hour Response         5WS0F15435           1YR Onsite 24x7x4 Hour Response + Priority Support         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15427           1YR Onsite 24x7x8 Hour Response         5WS0F15461           1YR Onsite 9x5x4 Hour Response         5WS0F15416           1YR Onsite 9x5x4 Hour Response         5WS0F15407           1YR Onsite NBD         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15465           TopSeller Priority (TopSeller models only)           3YR Onsite 24x7x4 Hour Response         5WS0D73789           3YR Onsite 24x7x4 Hour Response         5WS0D73792           4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15470           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15470           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423	5YR Onsite 9x5x4 Hour Response + Priority Support	
5YR Onsite NBD + Priority Support         5WS0F15463           Fost Warranty           1YR Onsite 24x7x4 Hour Response         5WS0F15435           1YR Onsite 24x7x4 Hour Response + Priority Support         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15427           1YR Onsite 9x5x4 Hour Response         5WS0F15361           1YR Onsite 9x5x4 Hour Response         5WS0F15416           1YR Onsite 9x5x4 Hour Response         5WS0F15407           1YR Onsite NBD         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15465           TopSeller Priority (TopSeller models only)           3YR Onsite 24x7x4 Hour Response         5WS0D73789           4YR Onsite 9x5x4 Hour Response         5WS0D73792           4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite NBD         5WS0D73791           4YR Onsite NBD         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15470           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Priority Support         5WS0F15423	5YR Onsite NBD + KYD + Priority Support	5PS0F15388
Post Warranty           1YR Onsite 24x7x4 Hour Response         5WS0F15435           1YR Onsite 24x7x4 Hour Response + Priority Support         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15427           1YR Onsite 24x7x8 Hour Response + Priority Support         5WS0F15461           1YR Onsite 9x5x4 Hour Response + Priority Support         5WS0F15416           1YR Onsite NBD         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15465           TopSeller Priority (TopSeller models only)           3YR Onsite 24x7x4 Hour Response         5WS0D73789           3YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite NBD         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15414           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Priority Support         5WS0F15423	5YR Onsite NBD + Priority Support	
1YR Onsite 24x7x4 Hour Response         5WS0F15435           1YR Onsite 24x7x4 Hour Response + Priority Support         5WS0F15370           1YR Onsite 24x7x8 Hour Response         5WS0F15427           1YR Onsite 24x7x8 Hour Response + Priority Support         5WS0F15361           1YR Onsite 9x5x4 Hour Response         5WS0F15361           1YR Onsite 9x5x4 Hour Response         5WS0F15407           1YR Onsite NBD         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15465           TopSeller Priority (TopSeller models only)           3YR Onsite 24x7x4 Hour Response         5WS0D73789           3YR Onsite 9x5x4 Hour Response         5WS0D73787           4YR Onsite 24x7x4 Hour Response         5WS0D73791           4YR Onsite NBD         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15414           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Priority Support         5WS0F15423		5WS0E77173
1YR Onsite 24x7x4 Hour Response + Priority Support       5WS0F15370         1YR Onsite 24x7x8 Hour Response + Priority Support       5WS0F15427         1YR Onsite 24x7x8 Hour Response + Priority Support       5WS0F15361         1YR Onsite 9x5x4 Hour Response + Priority Support       5WS0F15348         1YR Onsite NBD       5WS0F15407         1YR Onsite NBD + Priority Support       5WS0F15407         1YR Onsite NBD + Priority Support       5WS0F15465         TopSeller Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73787         4YR Onsite 24x7x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0F15423		1
1YR Onsite 24x7x8 Hour Response       5WS0F15427         1YR Onsite 24x7x8 Hour Response + Priority Support       5WS0F15361         1YR Onsite 9x5x4 Hour Response       5WS0F15416         1YR Onsite 9x5x4 Hour Response + Priority Support       5WS0F154348         1YR Onsite NBD       5WS0F15407         1YR Onsite NBD + Priority Support       5WS0F15465         TopSeller Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73787         4YR Onsite 24x7x4 Hour Response       5WS0D73792         4YR Onsite 9x5x4 Hour Response       5WS0D73791         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15470         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0F15457		
1YR Onsite 24x7x8 Hour Response + Priority Support       5WS0F15361         1YR Onsite 9x5x4 Hour Response       5WS0F15416         1YR Onsite 9x5x4 Hour Response + Priority Support       5WS0F15348         1YR Onsite NBD       5WS0F15407         1YR Onsite NBD + Priority Support       5WS0F15465         TopSeller Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73787         4YR Onsite 24x7x4 Hour Response       5WS0D73791         4YR Onsite 9x5x4 Hour Response       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0F15423		
1YR Onsite 9x5x4 Hour Response       5WS0F15416         1YR Onsite 9x5x4 Hour Response + Priority Support       5WS0F15348         1YR Onsite NBD       5WS0F15407         1YR Onsite NBD + Priority Support       5WS0F15465         TopSeller Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73792         4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite 9x5x4 Hour Response       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0F15457		
1YR Onsite 9x5x4 Hour Response + Priority Support       5WS0F15348         1YR Onsite NBD       5WS0F15407         1YR Onsite NBD + Priority Support       5WS0F15465         TopSeller Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73797         4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0F15457		
1YR Onsite NBD         5WS0F15407           1YR Onsite NBD + Priority Support         5WS0F15465           TopSeller Priority (TopSeller models only)           3YR Onsite 24x7x4 Hour Response         5WS0D73789           3YR Onsite 9x5x4 Hour Response         5WS0D73792           4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite NBD         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15414           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Priority Support         5WS0F15457		
1YR Onsite NBD + Priority Support       5WS0F15465         TopSeller Priority (TopSeller models only)         3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73792         4YR Onsite 24x7x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0F15457		
TopSeller Priority (TopSeller models only)           3YR Onsite 24x7x4 Hour Response         5WS0D73789           3YR Onsite 9x5x4 Hour Response         5WS0D73787           4YR Onsite 24x7x4 Hour Response         5WS0D73791           4YR Onsite 9x5x4 Hour Response         5WS0D73791           4YR Onsite NBD         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15414           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Priority Support         5WS0E76457		
3YR Onsite 24x7x4 Hour Response       5WS0D73789         3YR Onsite 9x5x4 Hour Response       5WS0D73787         4YR Onsite 24x7x4 Hour Response       5WS0D73792         4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0E76457		344001 10400
3YR Onsite 9x5x4 Hour Response       5WS0D73787         4YR Onsite 24x7x4 Hour Response       5WS0D73792         4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0E76457	3YR Onsite 24x7x4 Hour Response	5WS0D73789
4YR Onsite 24x7x4 Hour Response       5WS0D73792         4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0E76457		
4YR Onsite 9x5x4 Hour Response       5WS0D73791         4YR Onsite NBD       5WS0F15470         3YR Onsite 24x7x4 Hour Response+Priority Support       5WS0F15414         3YR Onsite 9x5x4 Hour Response+Priority Support       5WS0F15423         3YR Priority Support       5WS0E76457		
4YR Onsite NBD         5WS0F15470           3YR Onsite 24x7x4 Hour Response+Priority Support         5WS0F15414           3YR Onsite 9x5x4 Hour Response+Priority Support         5WS0F15423           3YR Priority Support         5WS0E76457		
3YR Onsite 24x7x4 Hour Response+Priority Support 5WS0F15414 3YR Onsite 9x5x4 Hour Response+Priority Support 5WS0F15423 3YR Priority Support 5WS0E76457	·	
3YR Onsite 9x5x4 Hour Response+Priority Support 5WS0F15423 3YR Priority Support 5WS0E76457	3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
3YR Priority Support 5WS0E76457	3YR Onsite 9x5x4 Hour Response+Priority Support	
4YR Priority Support 5WS0E76482	3YR Priority Support	5WS0E76457
	4YR Priority Support	5WS0E76482

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
  Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
  Best coverage for business critical work loads

#### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

#### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

•24 hours a day, 7 days a week, including nights and weekends Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

#### Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

#### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html

Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

### ThinkServer RD640 (70AY) - TopSeller

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AY0001US	2xE5-2609 v2	4GBx20	8x3.5"	RAID710 +CacheVault +CacheCade	2x400GB SSD(cache,RAID1) +6x1TB 3.5" SAS(RAID50)	DVD±RW		iKVM	X520SR2 +350T2 +350T2		800Wx2	Standard	1
70AY0002UX	2xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	16GBx4	8x3.5"	RAID500 +Upgrade	6x3TB 3.5" SATA(RAID50) +2x3TB 3.5" SAS(RAID1)	DVD±RW	IDM	IPMI	350T4	No	800Wx2	No	1
70AY0003UX	1xE5-2630L v2 6C/2.4GHz/ 15MB/1600MHz	8GBx2	8x3.5"	RAID700	2x500GB 3.5" SATA(RAID1)	No	IDM	IPMI	350T2	No	800Wx2	No	1
70AY0005UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0007UX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0008UX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top					
Memory type	RDIMM, DDR3, 4	4-channe	per prod	essor, 2	40-pin	Rise P. P.					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2					
Memory protection	ECC, memory m	irroring, n	nemory s	paring		supp supp					
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays						
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memon sockets sockets sockets sockets sockets sockets					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ockets  CPU1  Ockets  CPU2  Ockets  CPU2  Ockets					
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan					
TIAID Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with     super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay					
	* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8					
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)					
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	ernet ports ernet port	s by Intel by Intel 8	i350; 32574L, (	45): dedicate/share management	©∘□□□ Disk Bay Disk Bay					
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	optical 1-8 9-16  Rear  5-PCle x16 6-PCle x8 4-PCle x8 3-PCle x8 3-PCle x8					
Intelligent Diagnostics Module (IDM. opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prer	nium on iling com	selected ponent o	models, category,						
Security features	Power-on passwo	ord/admir	istrator p	password	l,	Front and Rear Ports Front: 2 USB 2.0, 1 VGA					
	IPMI 2.0-com	eed AST2 pliant bas	2300 graj eboard r	ohics/ma nanagen	nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Systems management (Optional iKVM)	optional Think	Server M LEDs sh tGrid Mar	anagemows the stager	ent Modu status of	ule Premium for iKVM functions power, ID, network, system	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 election slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8					
Cable mgmt (opt)	Optional cable m	anageme	nt arm o	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8					
Power supply	80 PLUS® Gold o	qualified,	edundar	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 election Slot 6: half-length, full-height, PCle 3.0 x8					
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-complication</li> <li>More environmen</li> <li>ThinkServer RD640 Pt</li> </ul>	ant	•		ements, please see ons of Standard Models sheet	Mechanical     2U rack with rail kit     19"W x 28.9"D x 3.45"H (with rack handles)     482.4mm W x 734mm D x 87.6mm H					
						(with rack handles) • 26.5 kg (58.42 lb) when fully configured					

### ThinkServer RD640 (70AY) - TopSeller (August 2014)

												Windows Server	Base on-site	
Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics			Cable mgmt	PSU		warranty	
70AY000HUS	Xeon E5-2640 v2 8C/2GHz/20MB/1600MHz	16GBx4 1866MHz	8x3.5"	RAID500	2x500GB 3.5" SATA (RAID 1)	DVD±RW	IDM Pre- mium	iKVM	350T2	No	800Wx2	R2 Datacenter	3	
	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	8x3.5"	RAID700	Open	DVD±RW	IDM Pre- mium	IPMI	No	No	800Wx1	No	3	

### 1. Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channel	per prod	cessor, 2	40-pin	Rise Po
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	sparing		Supplemental Suppl
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory sockets Sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Jamory ockets  Ockets  Ockets  Ockets  Ockets
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan
Tivile Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay
	* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	ernet ports rnet port	s by Intel by Intel 8	i350; 32574L, d	45): dedicate/share management	●○□□□ Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 R2 Serve R2 Serve	r adapter X520-DA2 adapter	Optical   1-8   9-16
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or	IDM Prer ndicate fa	nium on iling com	selected	models, category,	PSU PSU 4-PCle x8 3-PCle x8 Front and Rear Ports
Security features	Power-on passwo Trusted Platform	ord/admin Module (*	istrator p	oassword -complia	d, nt)	Front: 2 USB 2.0, 1 VGA Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45
Systems management (Optional iKVM)	IPMI 2.0-com	pliant bas Server M LEDs sho tGrid Mar	eboard r anagem ows the s nager	managen ent Modu status of	unagement processor, nent controller (BMC); ule Premium for iKVM functions power, ID, network, system EasyUpdate	1 RJ-45 (dedicate/share mgmt), 1 VGA  Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 election slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	nt arm o	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8
Power supply	80 PLUS® Gold o	qualified, ı	redundar	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models:  Slot 5: half-length, full-height, PCle 3.0 x16 (x8 electors)  Slot 6: half-length, full-height, PCle 3.0 x8
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-compli</li> <li>More environmer</li> <li>ThinkServer RD640 P</li> </ul>	ant	•		ements, please see ons of Standard Models sheet	Mechanical     2U rack with rail kit     19"W x 28.9"D x 3.45"H (with rack handles)     482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured

### ThinkServer RD640 (70B1) - TopSeller

	Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet			Server 2012 Preloaded	Base on-site warranty (-year)
70	DB10000US	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16GBx4	8x2.5"	RAID700 +Battery	3x300GB 2.5" SAS(RAID5)	DVD±RW	IDM	iKVM	350T2	Cable	800Wx2	Standard	1
70	0B10004UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70	DB10005UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70	0B10006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70	DB10007UX	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70	0B10008UX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
		1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top					
Memory type	RDIMM, DDR3, 4	4-channe	per prod	essor, 2	40-pin	Rise P. P.					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2					
Memory protection	ECC, memory m	irroring, n	nemory s	paring		supp supp					
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays						
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memon sockets sockets sockets sockets sockets sockets					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Sockets  CPU1  Sockets  CPU2  CPU2  Sockets  CPU2  Sockets  CPU1  Sockets  CPU2  Sockets  Soc					
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan					
TIAID Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with     super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay					
	* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8					
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)					
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	ernet ports ernet port	s by Intel by Intel 8	i350; 32574L, (	45): dedicate/share management	©∘□□□ Disk Bay Disk Bay					
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	Optical   1-8   9-16					
Intelligent Diagnostics Module (IDM. opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prer	nium on iling com	selected ponent o	models, category,	PSU PSU					
Security features	Power-on passwo	ord/admir	istrator p	password	l,	Front and Rear Ports Front: 2 USB 2.0, 1 VGA					
	IPMI 2.0-com	eed AST2 pliant bas	2300 graj eboard r	ohics/ma nanagen	nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA					
Systems management (Optional iKVM)	optional Think	Server M LEDs sh tGrid Mar	anagemows the stager	ent Modu status of	ule Premium for iKVM functions power, ID, network, system	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 election slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8					
Cable mgmt (opt)	Optional cable m	anageme	nt arm o	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8					
Power supply	80 PLUS® Gold o	qualified,	edundar	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 election Slot 6: half-length, full-height, PCle 3.0 x8					
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-compli</li> <li>More environmer</li> <li>ThinkServer RD640 Pt</li> </ul>	ant ntal inforn	nation an		ements, please see	Mechanical     2U rack with rail kit     19"W x 28.9"D x 3.45"H (with rack handles)     482.4mm W x 734mm D x 87.6mm H					
						(with rack handles) • 26.5 kg (58.42 lb) when fully configured					

### ThinkServer RD640 (70B1) - TopSeller (August 2014)

Product Specifications Reference (PSREF)

												Windows	Base
												Server	on-site
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70B1001CUX	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

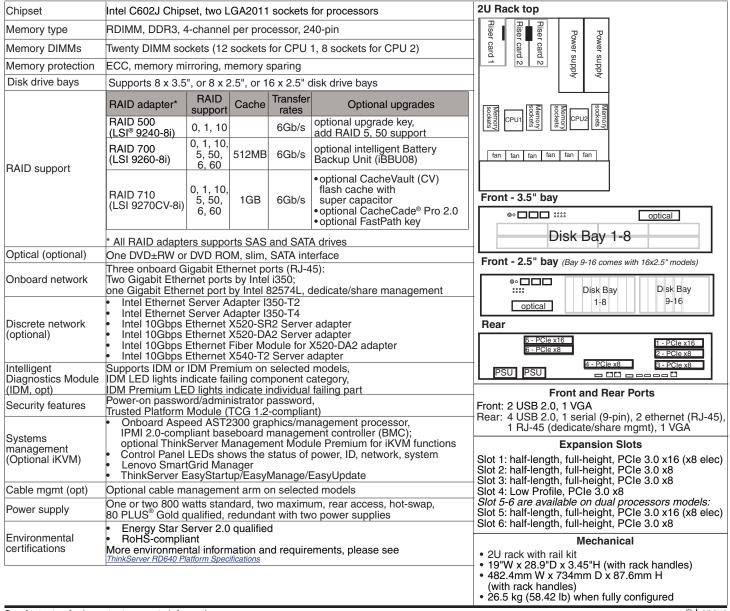
Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channel	per pro	cessor, 2	40-pin	Rise P
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory	sparing		supp supp
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5"	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Mar Social
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Sockets Sockets Sockets Sockets Sockets Sockets Sockets Sockets Sockets
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan
TIALD Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay
	* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8
Optical (optional)	One DVD±RW or					Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network		ernet ports ernet port	s by Intel by Intel 8	l i35Ò; 82574L, (	45): dedicate/share management	®∘□□□ Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter lå X520-SF X520-DÆ Fiber Mo	350-T4 R2 Serve A2 Serve odule for	r adapter X520-DA2 adapter	Optical
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prer ndicate fa	nium on iling com	selected	models, category,	4 - PCle x8   3 - PCle x8
Security features	Power-on passw	ord/admir	istrator	password	<del>d,</del>	Front and Rear Ports Front: 2 USB 2.0. 1 VGA
		eed AST2	2300 gra	phics/ma	nt) nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA
Systems management (Optional iKVM)	optional Think	Server M LEDs shot Grid Mar	anagem ows the nager	ent Modu status of	ule Premium for iKVM functions power, ID, network, system	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	nt arm c	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8
Power supply	80 PLUS® Gold of	qualified, ı	edunda	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-compli</li> <li>More environment</li> <li>ThinkServer RD640 P</li> </ul>	ant	•		ements, please see	Mechanical  • 2U rack with rail kit  • 19"W x 28.9"D x 3.45"H (with rack handles)
See footnotes for impo	artant warrantu infa	rmation				482.4mm W x 734mm D x 87.6mm H     (with rack handles)     26.5 kg (58.42 lb) when fully configured  © Lenovo

### ThinkServer RD640 (70B0) - TopSeller

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	on-site warranty
70B00003US	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx19+ 4GBx1	16x2.5"	RAID710 +CacheCade	2x100GB SSD(cache,RAID1) +14x1TB 2.5" SATA(RAID50)	DVD	IDM Premium	iKVM	X520SR2 +350T4+350T4	Cable	800Wx2	Standard	1
70B00004US	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz		16x2.5"	RAID500	2x900GB 2.5" SAS(RAID1)	No	IDM	IPMI	350T4	No	800Wx2	Standard	1
70B0000FUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz		16x2.5"	RAID700 +Battery	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3
70B0000GUX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz		16x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>



### ThinkServer RD640 (70B0) - TopSeller (November 2013)

Product Specifications Reference (PSREF)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim	Intelligent Diagnostics	Remote mgmt		Cable mgmt	PSU	Windows Server 2012 Preloaded	on-site warranty
70B0000LUX	1xE5-2650v2 8C/2.6GHz /20MB/1866MHz	8GBx1	16x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No		800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	1-channe	per pro	cessor, 2	40-pin	Rise Rise P
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory mi	irroring, n	nemory	sparing		Supplement
Disk drive bays	Supports 8 x 3.5	", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memoy sockets Suckets
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
The Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay
	* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8
Optical (optional)	One DVD±RW or					Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network		rnet ports	s by Inte by Intel (	l i350; 82574L, (	45): dedicate/share management	©∘□□□ Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter 13 X520-SF X520-DA Fiber Mo	350-T4 R2 Serve A2 Serve odule for	r adapter X520-DA2 adapter	Optical   1-8   9-16
Intelligent Diagnostics Module (IDM, opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prer ndicate fa D lights i	mium on iling com ndicate i	selected nponent o ndividual	models, category, failing part	PSU PSU 4-PCie x8 8-PCie x8 Front and Rear Ports
Security features	Power-on passwo Trusted Platform					Front: 2 USB 2.0, 1 VGA
Systems	<ul> <li>Onboard Aspelling IPMI 2.0-complex</li> </ul>	eed AST2 pliant bas	2300 gra seboard i	phics/ma managen	nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt), 1 VGA
management (Optional iKVM)		LEDs sh tGrid Mar	ows the	status of	ule Premium for iKVM functions power, ID, network, system  EasyUpdate	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 election Slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	ent arm c	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8
Power supply	80 PLUS® Gold o	ualified,	redunda	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-complia</li> <li>More environmer</li> <li>ThinkServer RD640 Pt</li> </ul>	ant	•		ements, please see	Slot 6: half-length, full-height, PCle 3.0 x8  Mechanical  • 2U rack with rail kit  • 19"W x 28.9"D x 3.45"H (with rack handles)  • 482.4mm W x 734mm D x 87.6mm H (with rack handles)  • 26.5 kg (58.42 lb) when fully configured

### ThinkServer RD640 (70B0) - TopSeller (August 2014)

Product Specifications Reference (PSREF)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bavs	RAID controller	Storage	Slim	Intelligent Diagnostics		Discrete ethernet	Cable mgmt		Windows Server 2012 Preloaded	on-site warranty
	X Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz		16x2.5	RAID700		DVD±RW	IDM	IPMI	No		800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

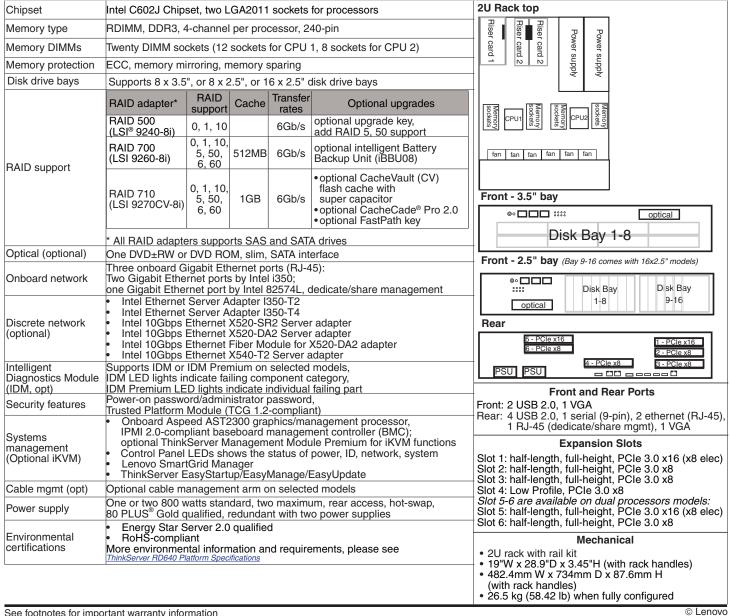
Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channe	per prod	cessor, 2	40-pin	Rise P. P.
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, r	nemory s	sparing		supply su
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memori Sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Sockets  CPU1  Sockets  CPU2  CPU2  CPU2  CPU2  CPU2  CPU3
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
TIAID Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay  © □ □ □ :::: optical
	* All RAID adapte					Disk Bay 1-8
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	rnet port	s by Intel by Intel 8	⊟i35Ò; 32574L, d	45): dedicate/share management	© Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter 13 X520-SF X520-DA Fiber Mo	350-T4 R2 Serve R2 Serve	r adapter X520-DA2 adapter	Optical   1-8   9-16
Intelligent Diagnostics Module (IDM. opt)	Supports IDM or	IDM Prei	mium on iling com	selected	models, category,	PSU PSU 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Security features	Power-on passwo Trusted Platform	ord/admir	nistrator p	password	d,	Front: 2 USB 2.0, 1 VGA
Systems management (Optional iKVM)	<ul> <li>Onboard Asp IPMI 2.0-com optional Think</li> </ul>	eed AST2 pliant bas Server M LEDs sh	2300 gra seboard r lanagem ows the	phics/ma nanagen ent Modu	inagement processor, nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt), 1 VGA  Expansion Slots  Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)
	<ul> <li>ThinkServer E</li> </ul>	EasyStart	up/Easyl			Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m				ed models um, rear access, hot-swap,	Slot 4: Low Profile, PCIe 3.0 x8  Slot 5-6 are available on dual processors models:
Power supply	80 PLUS® Gold o	qualified,	redundaı	nt with tw	o power supplies	Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec)
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-complia</li> <li>More environmer</li> <li>ThinkServer RD640 Pt</li> </ul>	ant ntal inforn	' nation ar		ements, please see	Slot 6: half-length, full-height, PCle 3.0 x8  Mechanical  • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles)
						482.4mm W x 734mm D x 87.6mm H     (with rack handles)     26.5 kg (58.42 lb) when fully configured

### ThinkServer RD640 (70AV)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AV0000UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AV0001UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

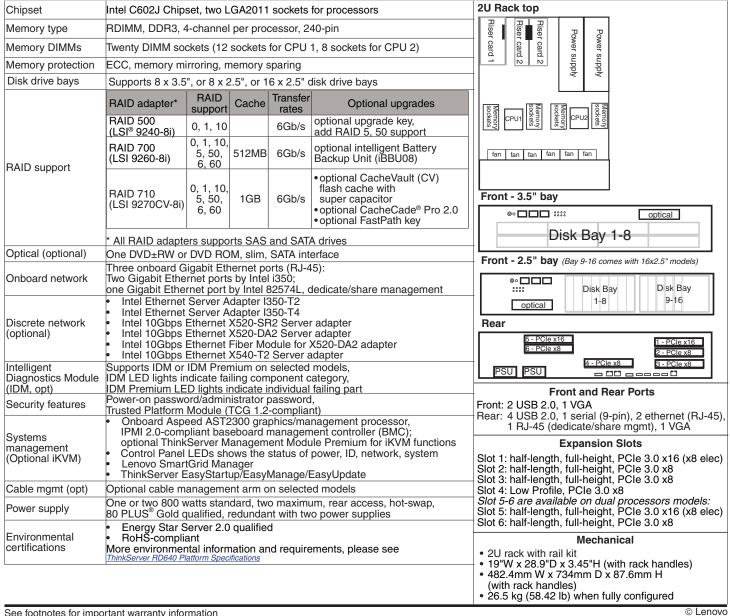


### ThinkServer RD640 (70AX)

												Windows	Base	
												Server	on-site	
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty	
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)	
	1xE5-2620 6C/2GHz/ 15MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3	

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

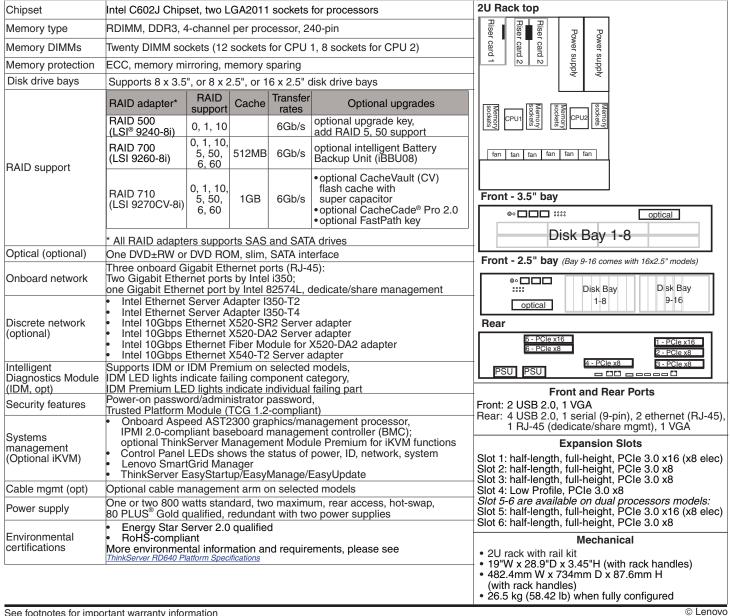


### ThinkServer RD640 (70AW)

												Windows	Base	
												Server	on-site	
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty	
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)	
70AW0005UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	16x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3	

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>



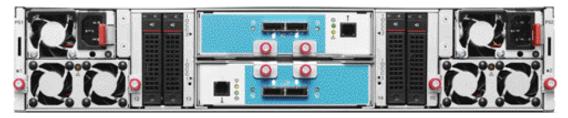
### **ThinkServer SA120 Direct Attached Storage Photography**



Front View



Rear View (With optional 2nd I/O module and 2nd power supply)



Rear View

(With optional 4 x 2.5" SATA SSD hot-swap disk drive bays, 2nd I/O module, and 2nd power supply)

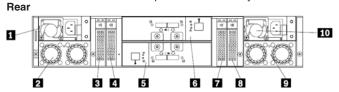
### ThinkServer SA120 Direct Attached Storage - Standard Models

Туре	Type-model		Front 12 x 3.5" disk bays for SAS disk drives	Rear 4 x 2.5" disk bays for SATA SSD	Front 3.5" SAS hot-swap drives (up to 12)	Rear 2.5" SATA SSD hot-swap drives (up to 4)	External minSAS Cable (SFF8088 to SFF8088)	Power Supply (1 or 2)	Rail kit	Base Warranty	Ann Date (mm/yy)
70F0	70F00000UX	1	12 x 3.5"	No	Open	No	1 x 1m	1 x 550W	Rail kit	3	02/14
70F0	70F00001UX	1	12 x 3.5"	No	12 x 1TB 3.5" SAS	No	1 x 1m	1 x 550W	Rail kit	3	02/14
70F0	70F00002UX	2	12 x 3.5"	No	12 x 2TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	02/14
70F0	70F00003UX	2	12 x 3.5"	No	12 x 4TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	02/14
70F1	70F10000UX	1	12 x 3.5"	No	Open	No	1 x 1m	1 x 550W	Rail kit	3	02/14
70F1	70F10001UX	2	12 x 3.5"	No	Open	No	2 x 1m	2 x 550W	Rail kit	3	02/14
70F1	70F10006UX	2	12 x 3.5"	No	12 x 2TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	05/14
70F1	70F10007UX	2	12 x 3.5"	No	12 x 4TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	05/14

70F0: Relationship models	70F1:TopSeller models								
Connection mode	Connects directly to host server, up to 4 enclosures per port (cascading mode)								
Compatible host server and RAID controllers/Host	Supports the following RAID controller or Host Bus adapters on compatible host servers, RAID levels are supported by RAID controller on host server:								
Bus adapters	RAID/HBA adapters	PN	TD340 RD340 RD440 RD540 RD640	RD330 RD430 RD530 RD630					
	LSI 9280-8e 6Gb SAS RAID HBA by LSI (0/1/10/5/50/6/60)	4XB0F28645	Yes	Yes					
	LSI 9286CV-8e 6Gb SAS RAID HBA by LSI (0/1/10/5/50/6/60)	4XB0F28646	Yes						
I/O Module	Supports 1 or 2 ThinkServer Storage Array 6Gbps I/O Modules, redundant with two I/O modules								
Front 3.5" Disk Bays	12 x 3.5" SAS hard drive bays, hot-swap, supports 1TB/2TB/3TB/4TB 3.5" SAS 6.0Gb/s 7200 rpm hard drives								
Rear 2.5" Disk Bays (optional)	Optional 4 x 2.5" SATA SSD hot-swap disk drive bays. Requires optional ThinkServer 2.5" SATA SSD Cage with SATA Interposers (4XF0F28766, includes two SSD cages for 4 bays)								
Maximum storage per enclosure	Front 3.5" Disk Bays: up to 48TB (using Optional rear 2.5" Disk Bays: up to 3.2TB (using Disk Bays: up to 3.2TB (using Disk Bays).	ng 12 x 4TB 3. ing 4 x 800GB	5" SAS h 2.5" SSE	ard drives) drives)					
External minSAS Cable (option)	Optional 0.5m/1.0m/2.0m/4.0m/6.0m SFF8088 cables	3 to SFF8088 2	26-pin Mi	ni-SAS					
Fan module	Two fan modules standard, hot-swap, redundant, two fans per fan module								
Power supply	One or two 550 watts standard, two maximum 80 PLUS Gold qualified, redundant with two po		hot-swap	,					
Rail kit	Includes static rail kit for rack mount								
Systems Management	SCSI Enclosure Services (SES) command set     Enclosure management via IOCC controller     Includes one RS232 to RJ11 cable for remote debug and firmware upgrade								
Mechanical	<ul> <li>2U rack, static rail kit included</li> <li>19"W x 15.51"D x 3.4"H (with rack handles)</li> <li>482.6mm W x 394.05mm D x 86.6mm H (with 22 kg (48.5 lb) when fully configured</li> </ul>	th rack handles	s)						
Environment	Air temperature:     Operating:     Storage:     Altitude:     Humidity:     Operating:     Storage without package:     Storage with package:	0°F to 158°F) i Bm), unpressur condensing) condensing)	in origina ized	l package					



12 x 3.5" hot-swap SAS disk drive bays



Power Supply 1 Fan modules 2/9 3/4/7/8 Rear 4 x 2.5" SATA SSD drive bays (optional)

I/O module 1 6 I/O module 2 (optional) Power Supply 2 (optional) 10

### Rear Ports (per I/O module)

1 SAS (SFF8088) IN connector for connection to host server 1 SAS (SFF8088) OUT connector for connection to another enclosure 1 RJ-11 port for remote debug and firmware upgrade

#### **Core Options**

3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19530
3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19531
3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19532
3.5" 4TB 7.2K SAS 6Gbps Hot Swap Hard Drive	4XB0F28635
3.5" 6TB 7.2K SAS 12Gbps Hot Swap Hard Drive	4XB0F28683
2.5" 100GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28636
2.5" 200GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28637
2.5" 400GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28638
2.5" 800GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28639
2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28615
2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28616
2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28640
2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28617
2.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28641
550W Gold Hot Swap Redundant Power Supply	4X20E54689
ThinkServer Storage Array 6Gbps IO Module	4XF0F28765
ThinkServer 2.5" SATA SSD Cage with SATA Interposers	4XF0F28766
(includes two SSD cages for 4 bays)	
0.5 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31494
1 meter 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31495
2 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31496
4 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31497
6 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31498

### **Withdrawn Product Books**

Product Specifications Reference (PSREF)

### Disclaimer

Lenovo provides the information in the Product Specifications Reference (PSREF) withdrawn product books on an "AS-IS" basis. Because the actual products have been withdrawn from marketing, the information in these withdrawn product books is no longer maintained or updated. The referenced footnote numbering may not correspond with the listed footnotes.

PSREF books for the withdrawn systems: http://www.lenovo.com/psref/psrefs\_withdrawn.html **Availability:** All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors.

**Warranty:** For a copy of applicable product warranties, write to: Warranty Support Dept., EMEA Services, Lenovo, Eisteinova 21, 851 01 Bratislava, Slovakia. Lenovo makes no representation or warranty regarding third party products or services.

- Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.
- <sup>2</sup> **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less.
- 3 Systems with limited onsite service are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. Support unrelated to a warranty issue may be subject to additional charges. Support phone list available at www-307.ibm.com/pc/support/site.wss/ document.do?Indocid=MIGR-70552
- SATA/SAS: The system configuration supports the installation of either SATA or SAS disks. A configuration including both SATA and SAS disks is not supported.
- Lenovo Services: These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. See Lenovo Warranty Services terms and conditions for complete details and restrictions.

8 RAID: Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy.

RAID levels and requirements:

- RAID 0 (striping) provides increased performance by writing data across multiple drives.
- RAID 1 (mirroring) provides fault tolerance by writing the data on two drives.
- RAID 5 (striping with parity) uses distributed parity data to provide fault tolerance more efficiently than RAID 1. Requires three or more drives.
- RAID 6 (striped set with dual distributed parity) provides fault tolerance from two drive failures; array continues to operate with up to two failed drives. Requires four drives.
- RAID 10 (or RAID 1+0) combines
   RAID 1 and RAID 0 to create a stripe of mirrors that is fault tolerant while offering increased performance.

   Requires four drives.
- RAID 50 (or RAID 5+0) combines
   RAID 5 and RAID 0 to create block-level striping with distributed parity
   improving performance over RAID 5.

   Requires six drives.
- RAID 60 (or RAID 6+0) combines
   RAID 6 and RAID 0 to create block-level striping with distributed double
   parity improving performance over
   RAID 6. Requires eight drives.
- <sup>14</sup> Response times may vary. Response time is an average target and comitted service level. May exclude some holidays. Telephone support may be subject to additional charges.



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